

LISTA INCIDENTI NUCLEARI E CORRELATI (1971-1990) in costante aggiornamento

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I CODICI NUCLEARI

Scala INES ((International Nuclear Event Scale), adottata internazionalmente dall'IAEA (International Atomic Energy Agency):

- livello 0 (zero): Deviazione (non significativo per la sicurezza)
- livello 1: Anomalia, con conseguenze praticamente nulle per la popolazione e l'ambiente.
- livello 2: Guasto, con conseguenze sulle persone valutabili in dosi assorbite di radiazioni piuttosto basse
- livello 3: Guasto grave, con conseguenze sulle persone valutabili in dosi assorbite di radiazioni piuttosto basse
- livello 4: Incidente senza conseguenze significative all'esterno dell'impianto. Incidente con impatto esterno minore, con esposizione radiologica della popolazione circostante dell'ordine dei limiti prescritti. Guasto significativo del nocciolo di un reattore nucleare o barriere protettive, con esposizione fatale di un lavoratore dell'impianto (Windscale -oggi Sellafield-, 1973; Saint-Laurent, 1980)
- livello 5: Incidente con possibili conseguenze all'esterno dell'impianto. Rilascio all'esterno di materiale radioattivo, in quantità radiologicamente equivalente ai valori compresi tra 100 e 1000 Tera-Becquerel (TBq), richiedente una parziale attuazione di pianificate contromisure (Windscale - oggi Sellafield-, 1957; Three Mile Island, 1979)
- livello 6: Incidente grave. Significante rilascio all'esterno di materiale radioattivo, in quantità radiologicamente equivalente a valori compresi fra 1 e 10 PBq di iodio-131, tale da richiedere la completa attuazione di pianificate contromisure facenti parte di un piano di emergenza esterno al fine di limitare gravi effetti sulla salute della popolazione (Mayak, 1957)
- livello 7: Incidente molto grave. Rilascio all'esterno di un impianto di grandi dimensioni di ingenti quantità di materiale radioattivo (maggiori di 10 Peta-Becquerel (PBq) equivalenti di iodio-131) in un'area molto vasta con conseguenti effetti acuti sulla salute della popolazione esposta e conseguenze gravi sull'ambiente (Chernobyl, 1986)

Classificazione del PENTAGONO degli incidenti riguardanti ordigni nucleari:

- Empty quiver (faretra vuota): furto o smarrimento di un ordigno nucleare
- Blunt Sword (spada spuntata): scomparsa di aerei, navi, sottomarini, ecc, trasportanti ordigni nucleari; incidenti a convogli nucleari (codice di gravità correlato al grado di contaminazione ambientale)
- Bent Spear (lancia ricurva): scomparsa di aerei, navi, sottomarini, ecc, trasportanti ordigni nucleari; ; incidenti a convogli nucleari (codice di gravità correlato al grado di contaminazione ambientale)
- Broken Arrow (freccia spezzata): grave rischio di esplosione degli ordigni nucleari (Lakeenheat, 27 luglio 1956; Goldsboro, 24 Gennaio 1961)

>>> INCIDENTI NUCLEARI FINO AL 1970

>>> INCIDENTI NUCLEARI DAL 1991 AD OGGI

1971 - Chiba, Giappone: fonte compromessa A 5.26-curie iridium-192 source for industrial radiography was lost. Six construction workers received doses of 15 to 130 rem, and three developed radiation sickness.

1971 - Den Haag (Olanda). Rottura di un tubo per il convogliamento di acqua radioattiva.

1971 - Kansas, USA. Si scopre che la miniera di sale scelta per lo stoccaggio delle scorie radioattive, al riparo dell'acqua, è piena di buchi e l'Aec (Ente americano per l'energia nucleare) è costretto a improvvisare dei piani di stoccaggio in superficie.

1971 - Francia. Fournier rivela in «Charlie Hebdo» n. 14 che un tecnico del centro nucleare di Saclay ha tentato, due anni prima, di suicidarsi dando fuoco al laboratorio in cui lavorava.

1 Gennaio 1971 - (incidente unità navale nucleare) Pacific: The USS Sphinx (ARL-24) loses power about 120 nautical miles north west of Okinawa.

15 Gennaio 1971 - (incidente unità navale nucleare) Atlantic: U.S. Navy barge loaded with diesel fuel sinks off Puerto Rico and spreads a mile-long oil slick.

19 Gennaio 1971 - (incidente unità navale nucleare) Pacific: The USS Roark (DE-1053) is badly damaged by an engine room fire in the western Pacific. The ship is taken in tow by the USS Towers (DDG-9) toward Midway Island from whence it will be towed to Pearl Harbor.

20 Gennaio 1971 - (incidente unità navale nucleare) Atlantic: The USS Wasp (CVS-18) and USS Chukawan (AO-100) collide while refueling south west of Bermuda.

24 Gennaio 1971 - (incidente unità navale nucleare) Pacific: The USS Hamner (DD-718) and USS Camden (AOE-2) collide during underway replenishment in the Gulf of Tonkin.

2 Febbraio 1971 - (incidente unità navale nucleare) Atlantic: The French nuclear-powered ballistic missile submarine Redoutable collides with a fishing trawler off Brest, France. The trawler is holed, but the crew is safely picked up by a French navy escort vessel.

3 Febbraio 1971 - (incidente unità navale nucleare) Atlantic: The Royal Navy diesel submarine HMS Opportune collides with an unidentified merchant vessel in the English Channel while running submerged, receiving slight superstructure damage.

4 Febbraio 1971 - USA: incidente da irradiazione A technician at a seed irradiation facility walked within 0.6 meters of a 7,700-curie cobalt-60 source, unaware that the source was unshielded. When the technician left the irradiation room, it was realized that the source was unshielded. His whole body dose was estimated at 50-400 rad (a dosimeter worn at the belt indicated 260 rad) with exposure to his hand of 600-1200 rad.

12 Febbraio 1971 - (incidente unità navale nucleare) Atlantic: The USS Great Sitkin (AE-17) arrives under tow at Roosevelt Roads, Puerto Rico, having lost power off the Virgin Islands when four spring bearings wiped. Sabotage is suspected.

15 Febbraio 1971 - Kurtchatov, Russia: criticità di incidente con uranio An experimental configuration was being used to test the effectiveness of reflector materials in a power reactor core. The experimental core used uranium oxide (20% U-235) fuel rods immersed in water to induce criticality. The test on 15 February used beryllium as a reflector, which was erroneously expected to behave similarly to an iron reflector previously used. Before all experimenters had arrived, a supervisor began adding water to the core tank without control rods actuated. The supervisor and another scientist saw a blue glow reflected from the ceiling at the same time neutron detection alarms sounded; they both left the room. The first excursion boiled some of the water into steam, expelling additional water from the tank; however, the water pump was still on and continued

filling the tank, causing additional excursions before electricity supply to the pump was cut off about 6 minutes later. The two individuals in the room received localized doses to their feet of about 1500 rem; one was assessed a whole-body dose of 330 rem.

19 Febbraio 1971 - (incidente unità navale nucleare) Atlantic: Water breaks into the French diesel submarine Flore when a valve of the snorkel device malfunctions as the submarine cruises submerged at a depth of 15 to 20 feet off Toulon. The submarine surfaces, but water had damaged its electrical circuits, and the engines could not be started. The submarine is slowly towed to Toulon through rough seas.

1 Marzo 1971 - (incidente unità navale nucleare) Atlantic: In March the USS Detroit (AOE-4) collides with a Navy oiler 70 miles off the South Carolina coast. Damage was slight.

26 Marzo 1971 - (incidente unità navale nucleare) Atlantic: The Royal Navy aircraft carrier HMS Albion suffers a fault in a drive shaft bearing and returns to Portsmouth, U.K., for repairs.

31 Marzo 1971 - (incidente unità navale nucleare) : The New York Times reports that a U.S. Navy Sturgeon class nuclear-powered attack submarine collides with a Soviet submarine 17 nautical miles off the coast of the Soviet Union while on a secret reconnaissance mission as part of the Holystone submarine intelligence gathering operations (see 5/25/75 entry).

3 Aprile 1971 - (incidente unità navale nucleare) Atlantic: The Royal Navy nuclear-powered attack submarine HMS Conqueror suffers flooding due to a failure of material while in a fitting-out basin in Cammel Laird shipyard, Birkenhead, U.K., over the weekend. Firemen and yardworkers spend about 17 hours pumping seven feet of water out of the submarine.

21 Aprile 1971 - (incidente unità navale nucleare) Atlantic: A fire of electrical origin and short duration occurs aboard the USS John F. Kennedy (CVA-67) in the Virginia Capes area.

1 Maggio 1971 - (incidente unità navale nucleare) Atlantic: The Royal Navy destroyer HMS Sheffield suffers an explosion as it is fitting out, killing several workmen.

6 Maggio 1971 - (incidente unità navale nucleare) Atlantic: The USS Bigelow (DD-942) suffers a possible momentary grounding while en route to an anchorage in Aarhus Bay, Denmark, causing minor damage.

6 Maggio 1971 - (incidente unità navale nucleare) Pacific: The USS Hanson (DD-832) collides with the Soviet fleet tug Diomid in the Korean Straits, causing minor damage but no injuries. The Hanson conjectures the accident was caused by a deliberate attempt by the tug (with an icebreaker bow) to ram the Hanson. A sliding collision, however, was the only result.

8 Maggio 1971 - (incidente unità navale nucleare) Pacific: A Nationalist Chinese fishing boat sinks off Kaohsiung, Taiwan, when it attempts to pass between the tug USS Molala (ATF-106) and its tow ARD-22, striking first the bridle and then the bow of the ARD.

26 Maggio 1971 - Kurtchatov, Russia: criticità di incidente con uranio in acqua Experiments were being conducted to determine the number of uranium fuel rods (90% U-235) required to produce a critical configuration. Rods were placed in various geometries within a Plexiglas tank which was filled with water, with additional rods added a few at a time. Insufficient calculations had been performed regarding such an apparatus. At the completion of one experiment, the water was being rapidly drained, causing the rods to slump into a supercritical configuration. The excursion ejected

water and fuel rod fragments from the tank. One technician received about 6,000 rem and died 5 days later; a supervisor received 2,000 rem and died 15 days later. Two others in the room received doses of 700-800 rem and suffered acute radiation sickness; they survived with long term health effects.

7 Giugno 1971 - (incidente unità navale nucleare) Atlantic: The French escort ship Surcouf and the Soviet tanker Busharov collide in the Mediterranean 60 miles south of Cartagena, Spain, at night, cutting the Surcouf in half and killing nine. The front half sinks, but the stern section is taken in tow by the French destroyer Tartu.

28 Giugno 1971 - (incidente unità navale nucleare) Atlantic: The casing of a valve ruptures filling the engine spaces with steam aboard the USS Trenton (LPD-14) while the ship is undergoing shakedown training in the Guantanamo Bay, Cuba, operating area, killing four and seriously injuring seven.

1 Luglio 1971 - (incidente unità navale nucleare) Atlantic: The Royal Navy diesel submarine HMS Artemis sinks without warning while moored in 30 feet of water at Gosport, England.

10 Luglio 1971 - (incidente unità navale nucleare) Pacific: The USS Constellation (CVA-64) suffers a one-hour machinery room fire while moored at San Diego, California.

16 Luglio 1971 - (incidente unità navale nucleare) Atlantic: An unidentified U.S. Navy ship spills 40,000 gallons of oil off New York, subsequently contaminating the water fronts of Coney Island and Staten Island, New York.

27 Luglio 1971 - (incidente unità navale nucleare) Atlantic: The USS Harlan R. Dickson (DD-708) runs aground off Cape Cod Canal, Massachusetts, after a mechanical failure, but is freed the next day.

15 Agosto 1971 - (incidente unità navale nucleare) Atlantic: The USS Saratoga (CVA-60) suffers flooding in an engine room while anchored off Athens, Greece.

17 Agosto 1971 - (incidente unità navale nucleare) Pacific: The USS Regulus (AF-57) is severely damaged when, struck by typhoon Rose, it is torn from its moorings and tossed aground on Kau Yi Chau Island near Hong Kong.

20 Agosto 1971 - (incidente unità navale nucleare) Atlantic: The USS Saratoga (CVA-60) suffers another engine room flood shortly after leaving Athens, Greece, where repair from a similar flood of 15 August just was completed.

8 Settembre 1971 - (incidente unità navale nucleare) Atlantic: The Royal Navy diesel submarine HMS Odin suffers a fire.

26 Settembre 1971 - (incidente unità navale nucleare) Atlantic: The USS Holder (DD-819) runs aground momentarily in Vieques Passage off Puerto Rico. There is no damage.

30 Settembre 1971 - (incidente unità navale nucleare) Atlantic: The Royal Navy diesel submarine HMS Alliance suffers a hydrogen build up and explosion in a battery compartment due to a faulty ventilation system while in Portsmouth, U.K., killing one and injuring 14.

11 Ottobre 1971 - (incidente unità navale nucleare) Atlantic: The USS Talbot (DEG-4) suffers an engineering casualty and is towed by the USS Skylark (ASR-20) to Newport, Rhode Island.

15 Ottobre 1971 - (incidente unità navale nucleare) Atlantic: In mid-October the Royal Navy aircraft carrier HMS Ark Royal suffers a fire while in Portsmouth, U.K.

21 Ottobre 1971 - (incidente unità navale nucleare) Atlantic: The Royal Navy aircraft carrier HMS Ark Royal suffers a second fire while in Portsmouth, U.K., taking six hours to control.

26 Ottobre 1971 - (incidente unità navale nucleare) Pacific: The Japanese fishing boat Minato Maru collides with an unidentified submarine in the Sea of Japan about 300 miles northwest of Niigata, Japan.

30 Ottobre 1971 - (incidente unità navale nucleare) Pacific: The USS Benjamin Stoddert (DDG-22) suffers a four-and-one-half hour fire in the motor generator set room while undergoing overhaul at Pearl Harbor, Hawaii.

31 Ottobre 1971 - (incidente unità navale nucleare) Pacific: The USS Niagara Falls (AFS-3) is slightly damaged by a maindeck fire while moored at Hong Kong. The fire is later determined to be caused by arson.

6 Novembre 1971 - Isola Amchitka, Nord Pacifico, Alaska (USA). Test nucleare ad una profondità di 1.800 metri con una potenza di 5 megaton per il collaudo delle testate dello Spartan, missile a lunga gittata pronto a partire in ogni momento - per l'intercettazione degli ICBM della Repubblica Sovietica - dai silos dislocati sul territorio statunitense negli anni durante il periodo della guerra fredda.

1 Novembre 1971 - (incidente unità navale nucleare) Atlantic: The USS Hardhead (SS-365) suffers minor structural damage when it is struck by an Italian ferry in the Straits of Messina, off Italy

19 Novembre 1971 - Monticello, Minnesota, USA. Nella centrale nucleare, un serbatoio d'acqua deborda, versando 190 metri cubi di acqua contaminata nel Mississippi. Delle materie radioattive entreranno nel sistema di canalizzazione delle acque di St. Paul.

12 Dicembre 1971 - New London, Connecticut, USA. Nel fiume Tamigi si disperdono 1.900 litri d'acqua contaminata derivante dall'acqua di raffreddamento radioattiva trasferita dal sottomarino americano USS Dace al sottomarino USS Fulton.

29 Dicembre 1971 - (incidente unità navale nucleare) Atlantic: The USS Dace (SSN-607) inadvertently discharges 500 gallons of water used as coolant for its nuclear reactor into the Thames River at New London, Connecticut, during a routine water transfer between the submarine and the USS Fulton (AS-11). The Navy says measurements in the area showed "no increase in radioactivity of the environment" on the following day and claims the coolant contains a "very small amount of radioactivity." Navy sources at the Pentagon acknowledge there have been a "afew" leakages at the base during such transfers in the past, although none were disclosed, but also none were of sufficient size to endanger anybody. Reportedly the Navy disclosed this accident only when rumors of a nuclear incident started circulating in New London.

31 Dicembre 1971 - (incidente unità navale nucleare) Atlantic: On two occasions in 1971 defective U.S. nuclear-powered ballistic missile submarine distress buoys accidentally shot to the surface signalling the submarines had been sunk by enemy action and each set off "a massive U.S. alert,"

raising the "threat of accidental war." A spokesman for the Pentagon admitted there had been two involuntary releases in 1971, one in the Mediterranean and one in the North Atlantic. But in each case, he said, the submarine informed its home base immediately and "There was no alert of any kind." One release was due to a mechanical problem and one to a human error. The Navy said technical corrections had been made since 1971 to prevent a recurrence of the accidental launchings.

1972 - Francia. Due militanti del gruppo ecologico «Survivre et vivre» scoprono che più di 500 fusti di residui radioattivi su 18.000 conservati all'aperto al centro di ricerche nucleari di Saclay, hanno larghe fenditure che lasciano così sfuggire la radioattività.

1972 - Francia. Un operaio portoghese che non conosce i segnali di pericolo lavora parecchie ore in una sala irradiata del centro di Saclay e resta irradiato oltre i limiti di guardia.

1972 - Francia. Ancora al centro di Saclay sfuggono dieci metri cubi di liquidi radioattivi.

1972 - West Valley, New York, USA. Dopo 6 anni di funzionamento viene chiusa la fabbrica di ritrattamento dei combustibili nucleari. Restano dei serbatoi contenenti 2.300 metri cubi di scorie altamente radioattive. In seguito si scopriranno contaminati i laghi Erie e Ontario.

1972 - Usa. Due lavoratori nell'impianto di Surry muoiono per l'esplosione dei tubi difettosi di un sistema di sicurezza mentre li stanno ispezionando.

1972 - Bulgaria: esposizione radioattiva autoinflitta An individual received a self-inflicted fatal radiation dose from cesium-137 capsules used for radiotherapy, possibly by injecting them into soft tissue. The localized dose exceeded 20,000 rad.

16 Gennaio 1972 - (incidente unità navale nucleare) Pacific: The USS Albert David (DE-1050) collides with a North Vietnamese junk in the Gulf of Tonkin and two people from the junk are lost.

24 Gennaio 1972 - (incidente unità navale nucleare) :Atlantic The USS Sea Horse (SSN-669) is grounded for two hours while outbound from Charleston, South Carolina.

1 Febbraio 1972 - (incidente unità navale nucleare) Atlantic: In February the Royal Navy diesel submarine HMS Alliance's engine room begins to flood while the ship is submerged during arial dive off Plymouth, U.K., in the English Channel. The submarine touches the seabed at 122 feet after diving too steeply due to incorrect trimming in response to the flooding. The Alliance leaves the bottom after bouncing off the seabed.

7 Febbraio 1972 - (incidente unità navale nucleare) Pacific: The USS Wahoo (SS-565) sustains damage to its starboard shaft when it collides with Queens Pier in Hong Kong after being carried by a tidal current.

19 Febbraio 1972 - (incidente unità navale nucleare) Atlantic: The hull of the USS Preserver (ARS-8) is cracked in three places when it strikes a rock while entering Portsmouth, New Hampshire, harbor during stormy weather.

23 Febbraio 1972 - (incidente unità navale nucleare) Atlantic: The USS Shreveport (LPD-12) and USS Nashville (LPD-13) are slightly damaged in a collision during exercises in the Caribbean.

24 Febbraio 1972 - (incidente unità navale nucleare) Atlantic: A U.S. Navy P-3 Orion patrol plane sights a Soviet Hotel II class nuclear-powered ballistic missile submarine on the surface 600 miles north east of Newfoundland. The submarine had an apparent nuclear propulsion problem which resulted in the loss of all power. Several deaths are thought to have occurred. The next day the U.S. Coast Guard cutter Boutwell sights the disabled submarine in company with five Soviet ships. An offer of assistance by the Boutwell receives no reply. The Soviet ships start back to the submarine's home base through heavy, stormy seas. On 18 March the submarine is still slowly moving across the north Atlantic now accompanied by nine Soviet ships and the U.S. Coast Guard cutter Gallatin. On 5 April, the West German Navy reports the submarine had reached its home waters in the White Sea.

25 Febbraio 1972 - (incidente unità navale nucleare) Atlantic: The USS Beacon (PG-99) suffers a large hole and an engine room flood after colliding with the Dutch fishing ship Syriname east of Cape Maisi, Cuba, and is towed to Guantanamo Bay.

Marzo 1972 - Alaska, USA. Un controllo di routine in una centrale nucleare rileva la presenza di radioattività nella rete di acqua del fabbricato (con i punti di acqua potabile) interconnesso con un sebaio di 11 metri cubi di scorie radioattive.

15 Marzo 1972 - (incidente unità navale nucleare) Atlantic: The USS Joseph Hewes (DE-1078) loses power about 600 miles east of Jacksonville, Florida, when a main engine line shaft bearing breaks in stormy seas.

16 Marzo 1972 - (incidente unità navale nucleare) Atlantic: The U.S. Navy reports the rare sighting of a Soviet Yankee class nuclear-powered ballistic missile submarine on the surface northeast of Iceland. It was not clear whether the submarine was in difficulty.

11 Aprile 1972 - (incidente unità navale nucleare) Atlantic: The USS Benjamin Franklin (SSBN-640) collides with and sinks a tugboat at the General Dynamics Electric Boat Division docks at Groton, Connecticut. The submarine, being overhauled at the shipyard, was not damaged.

16 Aprile 1972 - (incidente unità navale nucleare) Pacific: Two antiradiation missiles inadvertently fired by a U.S. support aircraft explode near the USS Worden (DLG-18) while the ship operates off Vietnam, killing one, injuring nine, and putting the ship out of action. The ship proceeds to Subic Bay, Philippines for ten days of repairs.

28 Giugno 1972 - (incidente unità navale nucleare) Pacific: The USS Oriskany (CVA-34) and USS Nitro (AE-23) are in a minor collision during underway replenishment 150 nautical miles east of Da Nang, South Vietnam.

6 Luglio 1972 - (incidente unità navale nucleare) Pacific: The USS Guadalupe (AO-32) sustains damage to its bow, bridge, and fueling probe in a collision with the USS Alamo (LSD-33) 30 miles north of Da Nang, South Vietnam, during underway replenishment when the Alamo's rudder jams hard left and does not respond.

10 Luglio 1972 - (incidente unità navale nucleare) Atlantic: The computer system of the USS Forrestal (CVA-59) is damaged by a fire determined to have been caused by arson while in Norfolk, Virginia.

19 Luglio 1972 - (incidente unità navale nucleare) Pacific: Damage to the reduction gears of the USS Ranger (CVA-61) while in San Diego, California, is determined to have been caused by sabotage.

20 Luglio 1972 - (incidente unità navale nucleare) Pacific: The USS Oriskany (CVA-34) loses a propeller and a section of the propeller's tail shaft while operating in the Pacific, thus limiting the carrier to three engines.

20 Luglio 1972 - (incidente unità navale nucleare) : A sailor who is said to have started fires aboard the Royal Navy frigate HMS Puma because the first lieutenant got on his nerves, is sentenced by a Portsmouth, U.K., court-martial.

16 Agosto 1972 - (incidente unità navale nucleare) Atlantic: The Royal Navy diesel submarine HMS Onyx suffers a fire started by chemicals while undergoing refit at a Portsmouth, U.K., dockyard, causing slight damage.

1 Ottobre 1972 - (incidente unità navale nucleare) Pacific: The USS Newport News (CA-148) suffers an accidental explosion in a gun turret while operating off Vietnam, killing 19, injuring ten (one mortally) and putting the ship out of operation.

5 Ottobre 1972 - (incidente unità navale nucleare) Arctic: The USS Mizar (T-AGOR-11) and the U.S. Coast Guard cutter Edisto collide about 720 miles north of Iceland in the Greenland Sea, as the Edisto tows the disabled Mizar. Both are disabled and are in danger of being beset by ice.

6 Ottobre 1972 - (incidente unità navale nucleare) Atlantic: The USS Tullibee (SSN-597) collides with the West German freighter Hagen as it is cruising just beneath the surface about 150 nautical miles east of Cape Hatteras, North Carolina, during stormy weather, causing slight damage to the submarine. The collision did not impair the operations of either ship.

11 Ottobre 1972 - (incidente unità navale nucleare) Atlantic: The French diesel submarine La Sirene sinks at its moorings after emergency bulkheads fail to prevent an inrush of water through an open torpedo tube, no reported injuries.

22 Ottobre 1972 - (incidente unità navale nucleare) Pacific: The USS Silas Bent (T-AGS-26) is badly damaged by fire while conducting surveillance off the South Korean coast. There are no casualties and the ship returns to Pusan under its own power.

25 Ottobre 1972 - (incidente unità navale nucleare) Pacific: The USS Snook (SSN-592) is slightly damaged when it strikes bottom in Dabob Bay, Washington, while on a celebration run. The submarine surfaced without any problems.

29 Ottobre 1972 - (incidente unità navale nucleare) Pacific: The USS Saratoga (CVA-60) suffers a machine room fire while in port at Singapore, killing three.

30 Ottobre 1972 - (incidente unità navale nucleare) : The USS Florikan (ASR-9) suffers a fire in a forward hold, killing one and injuring another.

31 Ottobre 1972 - (incidente unità navale nucleare) : While the USS Mississinewa (AO-144) is getting underway, sabotage is discovered in the ship's boiler system which is shut down before damage is incurred.

3 Novembre 1972 - (incidente unità navale nucleare) Pacific: A flash fire in the after fire room of the USS Henderson (DD-785) puts the Number 4 boiler out of commission. However, the ship continues operations off southern California.

12 Novembre 1972 - (incidente unità navale nucleare) Atlantic: The USS Kretchmer (DER-329) while crossing the Atlantic is forced to divert to Ponta Delgado, Azores, after suffering a series of material casualties.

14 Novembre 1972 - (incidente unità navale nucleare) : The Royal Navy frigate HMS Russell is damaged in a gale.

15 Novembre 1972 - (incidente unità navale nucleare) Atlantic: The USS Preserver (ARS-8) completes a month-long trans-Atlantic tow of the USS Brumby (DE-1044) from Greenock, Scotland, to Charleston, South Carolina, after the Brumby suffers damage to its steam generators.

Dicembre 1972 - Pauling, New York, USA. Un grave incendio e due esplosioni in una fabbrica di Plutonio, provocano la contaminazione del complesso industriale e del suolo, causandone la chiusura definitiva.

1 Dicembre 1972 - (incidente unità navale nucleare) Atlantic: According to raw CIA intelligence reports, in December a Soviet nuclear-powered submarine from the Northern Fleet suffers a nuclear radiation accident while on patrol off the eastern coast of North America. The accident involved leakage from a nuclear-armed torpedo in the Mine-Torpedo Department in the forward section of the submarine. Reportedly, "Doors were immediately secured in accordance with regulations and some crew members were trapped within the space where the nuclear radiation leakage occurred."

2 Dicembre 1972 - (incidente unità navale nucleare) Pacific: The USS Proteus (AS-19) experiences a blast in a boiler room while in Pearl Harbor, Hawaii, suffering only slight damage.

13 Dicembre 1972 - (incidente unità navale nucleare) Pacific: The USS Ranger (CVA-61) suffers a fire in the main machinery room while the ship operates off Vietnam. The fire takes two hours to control.

31 Dicembre 1972 - (incidente unità navale nucleare) Atlantic: According to raw CIA intelligence reports, probably in December 1972 or January 1973 an undetermined accident during Soviet naval operations cripples a Soviet nuclear-powered submarine in the Atlantic. Reportedly, the submarine is towed "at a speed of two to three knots" for six weeks to Severomorsk on the Kola Peninsula, arriving in February 1973. Also, "The crew members trapped in the forward space initially consumed dry rations that were permanently stored in the compartment and later they received food through a small opening from the weather deck. Upon arrival at Severomorsk, crew members were permitted to debark the submarine. Several men died shortly after the accident, others later.... The majority of the submarine crewmembers suffered from some form of radiation sickness."

1973 - Hanford (Usa). La Aec (Ente americano per l'energia nucleare) ammette che nei 15 anni precedenti si sono verificati 15 incidenti in cui si sono liberati liquidi radioattivi per un totale di 1.600.000 litri .

1973 - Den Haag (Olanda). 35 addetti agli impianti sono intossicati (7 in modo molto grave). Nubi di gas radioattivo si diffondono per 15 minuti sulla campagna.

5 Gennaio 1973 - (incidente unità navale nucleare) Pacific: The USS Henry B. Wilson (DDG-7) while outside Saigon, South Vietnam, suffers an in-bore premature explosion in Mount 51 which destroys a foot of the barrel and injures two crewmen.

21 Gennaio 1973 - (incidente unità navale nucleare) Atlantic: The USS Cascade (AD-16) experiences flooding and small fires in port at Sigonella, Italy. Sabotage is suspected.

22 Gennaio 1973 - (incidente unità navale nucleare) Atlantic: The USS Batfish (SSN-681) suffers bottom damage after running hard aground at Charleston, South Carolina, while proceeding to sea. The submarine is pulled free by tugs and returns to the dock.

23 Gennaio 1973 - (incidente unità navale nucleare) Atlantic: The Royal Navy frigate HMS Scylla collides with a Tamas River ferry between Plymouth and Torpoint in the river. The ferry's hull is split near the bows, leaving a three-foot-wide gash from handrail to waterline. The frigate continued down river for the sea.

23 Gennaio 1973 - (incidente unità navale nucleare) Atlantic: The Royal Navy frigates HMS Russell and HMS Hardy collide with minor damage in Portsmouth harbor, U.K. as they maneuver for a formation departure. Both continued to their exercise area.

23 Gennaio 1973 - (incidente unità navale nucleare) Atlantic: The Royal Navy fleet auxiliary Scarab collides with the Cleddau King ferry at Neyland, Pembrokeshire, Wales. An engineer on the ferry, which crosses the Cleddau River, is hurt when the impact threw him against the engines.

27 Gennaio 1973 - (incidente unità navale nucleare) Pacific: The USS Jason (AR-8) suffers minor damage when struck by the Japanese cargo ship Koro Maru while en route from Sasebo, Japan, to Keelung, Taiwan.

4 Febbraio 1973 - (incidente unità navale nucleare) Pacific: The USS Tolovana (AO-64) is slightly damaged by a fire apparently of electrical origin while in port at Subic Bay, Philippines.

5 Febbraio 1973 - (incidente unità navale nucleare) Atlantic: The USS Basilone (DD-824) suffers a boiler room explosion during training 120 miles south east of New York City, killing seven.

7 Febbraio 1973 - (incidente unità navale nucleare) Pacific: An explosion of fuel leaking from a broken pipe sets off an engine room fire on the USS Agerholm (DD-826) while the ship is off San Diego, California, killing three.

10 Febbraio 1973 - (incidente unità navale nucleare) Atlantic: The USS Fairfax County (LST-1193) is holed by an uncharted reef during amphibious exercises off Carbonaras, Spain, but is able to continue participation.

23 Febbraio 1973 - (incidente unità navale nucleare) Atlantic: The USS Franklin D. Roosevelt (CVA-42) suffers minor damage from a brief fire in the hangar deck while the carrier is undergoing restricted availability in Mayport, Florida.

Marzo 1973 - Chinon (Francia). Arresto definitivo della centrale nucleare di Chinon I, dopo soli 11 anni di funzionamento. Di fatto la centrale ha mosso le turbine per 43.000 ore, ossia per 5 anni.

11 Marzo 1973 - (incidente unità navale nucleare) Atlantic: The USS Maniwoc (LST-1180) experiences a brief fire in a pump room while in port at Little Creek, Virginia. There are no injuries.

27 Marzo 1973 - (incidente unità navale nucleare) Atlantic: The USS Greenling (SSN-614) goes below its safe diving level while training about 250 miles north west of Bermuda because a needle on a depth gauge sticks. The true depth is disclosed on another gauge before the submarine reaches a depth that would have crushed her hull. On 30 March the submarine arrives at its homeport of Groton, Connecticut. On 10 April the Greenling docks at Portsmouth Naval Shipyard, New Hampshire, for a thorough check.

27 Marzo 1973 - (incidente unità navale nucleare) Atlantic: The USS Hammerhead (SSN-663), operating east of the Virginia Capes area at about 300 feet, strikes a submerged object of unknown nature thought to be non-metallic, perhaps a whale. The impact was heavy enough to be heard and felt through out the ship. There was no discernable damage.

Aprile 1973 - Coulport, Gran Bretagna. A Scottish Electricity Board Land rover reversed into a RAF nuclear weapon load carrier transporting nuclear warheads for Polaris missiles. Minor damage was caused to the load carrier. The weapons were not damaged.

Aprile 1973 – Isole Hawaii (USA). Fuga radioattiva nel sottomarino statunitense Guardfish alle Hawaii. Cinque marinai dell'equipaggio vengono contaminati dalle radiazioni.

4 Aprile 1973 - (incidente unità navale nucleare) Atlantic: The USS Beacon (PG-99) runs aground at Beaufort Inlet, North Carolina, during "Exotic Dancer VI" exercises and is refloated the next day.

5 Aprile 1973 - (incidente unità navale nucleare) Atlantic: While sailing in the Virginia Capes area, the USS Independence (CVA-62) suffers a 45-minute fire in a catapult ventilation system which affects its operational readiness.

10 Aprile 1973 - (incidente unità navale nucleare) Pacific: The USS Guadalupe (AO-32) runs aground off Harbor Island in San Diego Bay, California, no reported injuries.

13 Aprile 1973 - Il modulo di servizio della navicella spaziale Apollo 13 distrutto da un'esplosione durante il volo verso la Luna precipita nell'Oceano Pacifico. Ha a bordo un generatore contenente plutonio.

21 Aprile 1973 - (incidente unità navale nucleare) Pacific: The USS Guardfish (SSN-612) experiences a primary coolant leak while running submerged about 370 miles south-south west of Puget Sound. The submarine surfaces and is ventilated and decontaminated, and repairs the casualty unassisted. Four crewmen are transferred to the Puget Sound Naval Hospital for monitoring.

23 Aprile 1973 - (incidente unità navale nucleare) Pacific: The USS Force (MSO-445) catches fire and sinks about 820 miles west of Guam in the Philippine Sea. Seventy crewmen who abandon the Force are picked up the next day by the British merchant ship Spratnes.

21 Maggio 1973 - (incidente unità navale nucleare) Atlantic: The USS Sturgeon (SSN-637) strikes the bottom of the ocean suffering minor damage while operating in deep water during a dive off the U.S. Virgin Islands. The Navy says there were no injuries to the crew and the submarine's nuclear power plant was not affected. The submarine put into the nearest U.S. port at Frederiksted, St. Croix, under its own power.

28 Maggio 1973 - (incidente unità navale nucleare) Pacific: The USS Charles Berry (DE-1035) and a Japanese cargo ship suffer minor damage in a collision in Kobe harbor, Japan.

3 Giugno 1973 - (incidente unità navale nucleare) Pacific: The USS Hull (DD-945) suffers a minor fire in an air conditioning unit while in port at San Diego, California.

4 Giugno 1973 - (incidente unità navale nucleare) Pacific: The USS Higbee (DD-806) suffers damage to its sonar dome when it is grounded for five hours at Subic Bay, Philippines.

6 Giugno 1973 - (incidente unità navale nucleare) Atlantic: The USS Skipjack (SSN-585) hits an uncharted sea mount during "Dawn Patrol" exercises in the Mediterranean Sea. The submarine suffers minor damage and proceeds on the surface to Soudha Bay, Crete, for hull inspection.

14 Luglio 1973 - (incidente unità navale nucleare) Atlantic: The USS Robert H. McCard (DD-822) damages its sonar dome when it runs aground on an uncharted sand bar while exiting Tampa Bay, Florida.

17 Luglio 1973 - (incidente unità navale nucleare) Atlantic: The U.S. Army Reserve transport ship Hickory Knoll collides with U.S. Coast Guard buoy tender Firebrush in Baltimore harbor, Maryland, shortly after being freed from a sand bar. Neither ship is seriously damaged. The Army says the Firebrush failed to concede the right of way.

28 Luglio 1973 - (incidente unità navale nucleare) Atlantic: The Canadian diesel submarine Okanagan and the tanker Grey Rover collide off the Scottish coast, no reported injuries.

3 Agosto 1973 - (incidente unità navale nucleare) Atlantic: The USS Victoria (AK-281) experiences an engine room fire while berthed at Eire Basin, Brooklyn, New York, delaying its sailing by two weeks in order to make repairs.

Settembre 1973 - La Hague (Francia). Fuga di gas radioattivo: 35 lavoratori sono contaminati di cui 7 gravemente.

Settembre 1973 - Windscale (GB). Nell'officina di ritrattamento si ha un rigetto di radioattività: 40 lavoratori sono contaminati.

5 Settembre 1973 - (incidente unità navale nucleare) Atlantic: The U.S. Defense Department reports that a damaged Soviet Echo II class nuclear-powered cruise missile submarine has been sighted in the Caribbean south of Cuba with an eight-foot gash in the port bow deck. This is apparently the result of a collision with another Soviet ship, perhaps a cruiser with visible scrapes on its hull, during maneuvers of the Soviet Caribbean task force. The Pentagon spokesman said the submarine did not appear to be in danger of sinking.

9 Settembre 1973 - (incidente unità navale nucleare) Pacific: The USS Claud Jones (DE-1033) experiences an engine room fire while en route to Pearl Harbor, Hawaii, causing substantial damage but no casualties.

22 Settembre 1973 - (incidente unità navale nucleare) Atlantic: The USS Saratoga (CVA-60) experiences a fire on the third deck, between the flight deck and the hangar deck, which takes nine hours to extinguish while the ship is in drydock at Norfolk, Virginia.

6 Ottobre 1973 - Guerra dello Yom Kippur. Durante la crisi Nixon dichiara l'allerta nucleare per il mondo, che cessa con la fine della crisi.

7 Ottobre 1973 - (incidente unità navale nucleare) Atlantic: The Soviet Kanin class guided missile destroyer 252 accidentally releases a torpedo after an explosion in a torpedo tube while shadowing the Royal Navy aircraft carrier HMS Hermes during NATO "Swift Move" exercises in the North Sea. Other torpedoes are jettisoned to clear the tubes near the fire.

Novembre 1973 - Hanford (Usa). Si ha la diciassettesima fuga di liquidi radioattivi. Gli accumuli di plutonio in una fossa vicino alla città sono così grandi da rendere possibile una reazione a catena.

1 Novembre 1973 - (incidente unità navale nucleare) Pacific: A U.S. Navy 100-foot underwater demolition team's vessel rams a minisubmarine in San Diego harbor, California, as both vessels are returning to Coronado amphibious base from routine exercises with 40 other vessels, killing one.

Dicembre 1973 - Usa. Su 39 reattori, 13 sono fuori servizio. Brown's Ferry lavora al 10%, Peach Botton al 2%, Connec 2 al 20%.

11 Dicembre 1973 - (incidente unità navale nucleare) Pacific: A fire, probably due to a fuel line failure, occurs in the mainengine room on board the USS Kitty Hawk (CVA-63) while the ship is 700 miles east of the Philippines, killing six.

12 Dicembre 1973 - (incidente unità navale nucleare) Atlantic: An explosion rips through the stack of the USS Detroit's (AOE-4) after engine room, causing much material damage while the ship is in Newport, Rhode Island, for repairs and upkeep.

29 Dicembre 1973 - (incidente unità navale nucleare) Pacific: An oil slick 11 miles in length results when a fuel tank of theUSS Pvt Joseph F. Merrell (T-AK-275) is opened in a collision with the Liberian freighter Pearl Venture off the Californian coast. The Pvt JosephF. Merrell is towed into San Luis Obispo Bay the next day while the oil slick dissipates at sea.

Prima del 1974 - Austria: Radioisotope indium-113 applied to a railroad car

1974 - In mare, Gran Bretagna. The diaphragm of a missile tube compressed on to a Polaris missile. There was no damage to missile or warheads.

1974 - Giappone. Il Giappone costringe gli USA a ritirare dai propri porti i sommergibili atomici perchè risultati radioattivi ed inquinanti. I dati forniti dalla U.S. Navy erano falsificati e i prelievi avvenivano in altre zone

1974 - Usa. Da un'inchiesta risulta che più di 3.700 persone che avevano accesso ad armi atomiche hanno dovuto essere licenziate. Motivi: demenza, decadimento intellettuale, alcolismo.

1974 - Shevchenko (URSS). Reazione tra il sodio (usato come liquido refrigerante) e l'acqua con generazione di idrogeno e soda caustica (che a sua volta corrode il circuito di trasporto del fluido). Il risultato è una grossa esplosione.

1974 - Usa. Una nube radioattiva di trizio si forma per una fuga di gas da un condotto della centrale di Savannah Mirex, in Carolina. La nube va lentamente alla deriva ad una altezza di 70 metri .

1974 - Francia. A 60 anni dall'avvio di una fabbrica di radio, nonostante il suo smantellamento, si libera ancora una radioattività significativa. L'acquirente del terreno di Gyf-sur-Yvette sul quale la fabbrica è situata scopre in vari punti fonti radioattive che superano 50 volte la dose massima consentita.

1974 - Belgio. L'acqua della condotta Visé, captata nel Pletron, contiene da 2 a 3 volte più radon 22 (gas radioattivo) del massimo ammesso per una popolazione adulta vicina ad una centrale.

8 Gennaio 1974 - (incidente unità navale nucleare) Atlantic: The USS Kittiwake (ASR-13) receives minor hull damage in a collision with the USS Finback (SSN-670) at the destroyer submarine piers at the Norfolk Naval Base, Virginia.

21 Gennaio 1974 - (incidente unità navale nucleare) Atlantic: The U.S. Navy says it is investigating possible sabotage in the cutting of electrical wires in the USS Spadefish (SSN-668), which is undergoing a one-year overhaul in the Norfolk Naval Shipyard, Virginia. Electrical wires on the submarine had been cut several times since the fall of 1973, prompting the Navy to investigate.

Febbraio 1974 - Al largo di Malta. Two Mk44 torpedoes which were being removed from a storage rack fell a few inches onto a WE177 weapon. There was some superficial scratching on the plastic protective strips on the edges of the weapon's rear tail fin. There was no damage to the weapon itself.

13 Febbraio 1974 - (incidente unità navale nucleare) Pacific: The USS Gurke (DD-783) experiences an electrical fire while operating in the Okinawa area, which damages a switchboard and associated equipment and injures two.

14 Febbraio 1974 - Plattsburgh AFB, New York. The nose landing gear of a USAF FB-111 carrying two short range attack air-to-surface missiles and two nuclear bombs collapsed as the aircraft was commencing an engine run-up during an alert exercise. There was no damage to the weapons and they were unloaded without incident.

14 Febbraio 1974 - (incidente unità navale nucleare) Indian: The USS Schofield (DEG-3) suffers a propulsion casualty and is taken in tow by the USS Bainbridge (DLGN-25) near the entrance of the Red Sea in the Indian Ocean. Repairs are completed the next day.

24 Febbraio 1974 - La Maddalena, Italia. Sostituiti improvvisamente i marinai statunitensi imbarcati sulla nave-balìa "Gilmore" (nave-appoggio-officina affiancata agli Hunter Killer, i sommergibili d'attacco) a causa di una contaminazione radioattiva

22 Marzo 1974 - La Maddalena, Italia. Il giornale "Il Messaggero" parla di tracce di cobalto 60 nelle acque del golfo de La Maddalena.

22 Marzo 1974 - Cipro. (informazione tratta dall'Oxburg report, 1992, Gran Bretagna). A spurious radiation monitor alarm. There was no damage to any nuclear weapon.

Aprile 1974 - Austria. Qualcuno contamina volontariamente il treno Vienna-Linz con Iodio 131 e Iodio 113. Dodici persone vengono ricoverate. Gli autori dell'attentato non sono mai scoperti.

Aprile 1974 - La Maddalena, Italia. I dati del CNEN evidenziano, fin dal 1972, un aumento della diffusione del cobalto e del manganese, attribuibili ai sommergibili, nel golfo de La Maddalena

7 Aprile 1974 - (incidente unità navale nucleare) Pacific: The USS Wyandot (T-AKA-92) is in collision with merchant ship Sacramento Venture off the entrance to Keelung, Taiwan. There were no casualties.

17 Aprile 1974 - (incidente unità navale nucleare) Atlantic: The Royal Navy nuclear-powered ballistic missile submarine HMS Renown strikes the seabed while carrying out an exercise in the Firth of Clyde. The submarine had just completed an expensive refit in Rosyth but was not carrying nuclear warheads. The captain Commander Robin Whiteside faced a court-martial on 11 June.

25 Aprile 1974 - (incidente unità navale nucleare) Atlantic: The USS Du Pont (DD-941) collides with the left swing span of a bridge at Yorktown, Virginia. The ship suffers damage to the forward mast while the bridge is closed to traffic for about an hour.

Maggio 1974 - Casaccia (Italia). Si spacca un recipiente contenente plutonio. Non si sa altro.

1 Maggio 1974 - (incidente unità navale nucleare) Pacific: In May the USS Pintado (SSN-672) reportedly collides almost head-on with a Soviet Yankee class nuclear powered ballistic missile submarine while cruising 200 feet deep in the approaches to the Petropavlovsk naval base on the Kamchatka Peninsula. The Soviet submarine surfaced immediately, but the extent of damage was not known. The Pintado departed from the area at top underwater speed and proceeded to Guam where it entered drydock for repairs lasting seven weeks. The collision smashed much of the Pintado's detection sonar, a starboard side torpedo hatch was jammed shut and diving plane received moderate damage. The Pintado was on an intelligence gathering mission in Soviet territorial waters.

6 Maggio 1974 - (incidente unità navale nucleare) Atlantic: The USS Jallao (SS-368) experiences an explosion in the engine room while providing services in the Guantanamo Bay, Cuba, operating area. An electrical arc ignited the engine room atmosphere causing a quick flash. The submarine surfaces and returns to port needing minor repairs and soot clean-up. Sixteen crewmembers are hospitalized with smoke inhalation effects and one with burns.

18 Maggio 1974 - India: primo test nucleare nel poligono di Kophkran - Rajasthan.

23 Maggio 1974 - (incidente unità navale nucleare) Pacific: An explosion in the hold of USS John R. Craig (DD-885) under overhaul in drydock at a civilian shipyard at Swan Island, Oregon, rocks the destroyer and buckles its plates, injuring 18. Welding was being done in the area where the explosion occurred.

28 Maggio 1974 - Usa. L'Usaec comunica che 861 anomalie si sono prodotte nel 1973 nei 42 reattori in funzione; che 371 avrebbero potuto essere serie e che 18 lo furono realmente (di cui 12 con fuga di radioattività)

Giugno 1974 - Parsippany, New Jersey, USA: incidente da irradiazione One person was exposed to a cobalt-60 source for 5-10 seconds before he realized the source was exposed and left the source location. He received a dose of about 400 rem and developed acute radiation syndrome but recovered despite an unsuccessful bone marrow transplant.

27 Luglio 1974 - (incidente unità navale nucleare) Pacific: The USS Enterprise (CVAN-65) suffers a fire in an electrical maintenance area off California, no reported injuries.

3 Agosto 1974 - (incidente unità navale nucleare) Indian: A wave sweeps over the forward deck of the USS Hawkins (DD-873) as it is refueling from the USS Marias (T-AO-57) in the Indian Ocean, injuring seven. An emergency visit to Diego Suarez, Madagascar, is made so the men can be treated at a hospital.

5 Agosto 1974 - (incidente unità navale nucleare) Pacific: The USS Lipan (ATF-85) collides with the tanker Atlantic Prestige between Vancouver Island and Washington while towing another vessel.

31 Agosto 1974 - (incidente unità navale nucleare) Atlantic: The Royal Navy coastal minesweeper HMS Brinton collides with a museum ship.

1 Settembre 1974 - (incidente unità navale nucleare) Pacific: The first and only Japanese nuclear-powered merchant ship, the Mutsu, develops a reactor leak during its first test voyage in the Pacific. The leakage apparently results from a faulty design in the reactor's shielding system and involves the release of radiation (gamma rays and neutrons escaping through a hatch cover) rather than an a leak of actual radioactive materials. Emergency repairs are made reportedly with a thick layer of sticky boiled rice. However, the ship drifts for weeks offnor thern Japan due to protests by fishermen who are concerned about contamination of their scallop beds in the vicinity of the ship's homeport of Mutsu and refuse to allow the the ship to dock. The fishermen end their protest after the government promises compensation and the ship docks in Mutsu on 15 October. In 1978 the ship is moved to Sasebo, Japan, and work on repairing the leak begins in August 1980 at the Sasebo Heavy Industries Company.

3 Settembre 1974 - (incidente unità navale nucleare) Atlantic: Shortly after getting underway in Norfolk, Virginia, the USS Butte (AE-27) suffers a major fire in the main switchboard, disrupting all ship support electrical supply. The Butte is towed back to the naval base for repairs which include replacing the switchboard.

19 Settembre 1974 - (incidente unità navale nucleare) Atlantic: The Royal Navy nuclear-powered attack submarine HMS Sovereign develops a steering defect during exercises off the west coast of Scotland while on the surface. On 23 September the ship istowed from the Coulport naval base to the submarine base at Faslane, Scotland, for investigation and repair.

27 Settembre 1974 - (incidente unità navale nucleare) Atlantic: The New York Times reports that Turkey's semi-official Anatolian News Agency said that a Soviet Kashin class guided missile destroyer exploded and sank in the Black Sea with no survivors about two weeks ago. Both Turkish Navy officials and the U.S. Defense Department refuse to confirm reports of the sinking. The Kashin class can carry nuclear-capable SA-N-1 Goa surface-to-air missiles, but qualified sources doubted the destroyer was carrying any nuclear-armed versions since the ship was on its sea trials. Later newspaper accounts based on U.S. intelligence sources report that 75 or more people may have been rescued, but even so a minimum of 275 perished.

19 Ottobre 1974 - (incidente unità navale nucleare) Pacific: The USS Richard S. Edwards (DD-950) experiences one-foot deep flooding in the fire room while in Pearl Harbor, Hawaii. The water is pumped out.

Novembre 1974 - Germania. (informazione tratta dall'Oxburg report, 1992, Gran Bretagna). Hoist cable of a jib crane slipped on its drum and allowed a WE177 in its container to fall a short distance onto is trolley. There was no damage to any nuclear weapon.

2 Novembre 1974 - (incidente unità navale nucleare) Atlantic: A four-hour fire aboard the Royal Navy cruiser HMS Bristol damages the turbine and boiler rooms and injures four sailors. The ship was on sea trials off Pembrokeshire, U.K., and had to betowed back to port.

3 Novembre 1974 - (incidente unità navale nucleare) Atlantic: The USS James Madison (SSBN-627) collides with an unknown Soviet submarine in the North Sea according to Jack Anderson's regular newspaper column of 1 January 1975. The collision left a nine-foot scrape in the Madison. According to Anderson the two submarines came within inches of sinking one another. The Madison proceeded to Holy Loch, Scotland, to effect repairs. The U.S. Navy refused to comment on the incident.

29 Novembre 1974 - Sardegna, Italia. Il settimanale corso Kirn denuncia il ritrovamento di rifiuti radioattivi sotterrati a S. Stefano e individuati con rilevatori geiger. Il giorno successivo i Comandi militari americani rassicurano: «Ci sono, ma non sono pericolosi».

6 Dicembre 1974 - (incidente unità navale nucleare) Atlantic: The USS Yukon (T-AO-152) experiences a fire in the electrical control board which renders the ship dead in the water in the western Mediterranean. The fire occurs in heavy weather and the ship drifts toward the Algerian coast.

12 Dicembre 1974 - (incidente unità navale nucleare) Pacific: The USS Edson (DD-946) experiences a fire in the after fire room while training with USS Coral Sea (CVA-43) off Hawaii. The fire was caused by the ignition of oil which was spraying from a rupture in a lube oil guage line. The area was secured and fire extinguished with no personnel casualties. The destroyer returned to Pearl Harbor under its own power for repairs.

13 Dicembre 1974 - (incidente unità navale nucleare) Atlantic: The USS Saratoga (CV-60) suffers a major aircraft accident when a jet blast deflector is inadvertently raised into the the turning propeller of a plane while the ship is involved in exercise "National Week XVII" in the Tyrrhenian Sea, injuring five crewmen and damaging five planes.

14 Dicembre 1974 - (incidente unità navale nucleare) Atlantic: The USS Kamehameha (SSBN-642) strikes submerged fishing gear during independent exercises in the central Mediterranean. Deep hull scrapes on the port side, a sheared underwater log sword, and a damaged screw result. The vessel returns to port under its own power for repairs.

24 Dicembre 1974 - (incidente unità navale nucleare) Atlantic: The Argentine warship Candido de Lasala suffers an explosion in its boiler room in the English Channel, killing two and injuring three.

31 Dicembre 1974 - (incidente unità navale nucleare) Pacific: Before 1975, a U.S. submarine engaged in a Holystone intelligence gathering mission reportedly is temporarily grounded in Vladivostok harbor. This apparently occurs when the vessel was running on low power to avoid detection and strikes the harbor bottom. It eventually frees itself. (See 5/25/75 entry. This accident is specifically reported as separate from other New York Times accounts of Holystone operations.)

Inverno 1974/75 – Leningrado (ora San Pietroburgo), URSS. Una serie di incidenti viene segnalata nell'inverno tra il 1974 e il 1975 presso la centrale nucleare di Leningrado, in Unione Sovietica. Tre morti accertati.

1974/1976 - USA: incidente radioterapico Continuing calibration of a cobalt-60 teletherapy unit was based on an erroneous decay curve, resulting in overexposures rising from 10% in the first 5 months to 50% 22 months after initial calibration. The medical physicist who did the calibration falsified documents to conceal the error. The problem was discovered by outside consultants brought in by the hospital to investigate apparent overexposures of some patients. Of 426 patients

treated in the last 16 months before identification of the problem, 300 died within one year of their pre-treatment cancer and 88 survived but had immediate severe complications related to the irradiated sites; 10 deaths have been attributed to overexposures.

1974-1986 - United States: 32 acts of intentional damage or suspected sabotage at domestic nuclear facilities

1974-1985 - Total of nearly 100 instances that involved response by NEST

1974-1980 - United States: total of about 80 instances of nuclear threats deemed credible; only two prompted NEST deployment

1975 – Francia. Due bombe esplodono in un canale di raffreddamento di una centrale in Bretagna danneggiando alcuni impianti

1975 - Tucuman, Argentina: incidente radioterapico Two employees were injured by radiation from a cobalt-60 source in a teletherapy unit. A failure of unit mechanisms caused high doses to the fingers of a technician and a physician, producing radiation burns on the fingers.

1975 - Brescia, Lombardia, Italia: incidente da irraggiamento alimentare One person was exposed to a cobalt-60 source in a cereal irradiation facility by climbing onto a conveyor belt to access the irradiation room. He was soon admitted to a hospital where it was initially thought his symptoms were due to exposure to pesticides; it was more than 2 days before he was correctly diagnosed as suffering from radiation exposure. The individual received a whole-body dose of 1,200-rem, with non-uniform exposure, and died 13 days later.

Gennaio 1975 - Usa. Viene ordinata la chiusura di 23 reattori per guasti nel sistema di raffreddamento, vibrazioni anormali e piccole fughe di gas radioattivo

5 Gennaio 1975 - (incidente unità navale nucleare) Pacific: The USS Enhance (MSO-437) is disabled by an engine room fire when a ruptured "O" ring in a lube oil filter causes the turbo charger to explode while operating off San Diego, California.

20 Gennaio 1975 - (incidente unità navale nucleare) Atlantic: The USS Newman K. Perry (DD-883) strikes an unknown object off New Jersey, cutting a small hole in the engine room and causing minor flooding.

16 Febbraio 1975 - (incidente unità navale nucleare) Pacific: The USS Swordfish (SSN-579) runs aground near Lanai, Hawaii, while conducting post-overhaul trials. The submarine surfaces safely and returns to Pearl Harbor for inspection and repair. The Navy says the submarine damaged sensor devices mounted on hull, but there were no breaks in the hull. The Honolulu Star-Bulletin, however, receives reports that a torpedo room flooded. The Navy denies this.

24 Febbraio 1975 - (incidente unità navale nucleare) Pacific: The USS Kansas City (AOR-3) is struck by the USS Henry B. Wilson (DDG-7) while moored at Subic Bay, Philippines, and both ships receive minor damage.

3 Marzo 1975 - (incidente unità navale nucleare) Atlantic: The USS Iwo Jima (LPH-2) and USS Nashville (LPD-13) are severely damaged when the Iwo Jima loses steering control and rams into the Nashville during highline transfer about 1,000 miles south west of the Azores.

5 Marzo 1975 - (incidente unità navale nucleare) Atlantic: The USS Edward McDonnell (FF-1043) is struck from astern by a Finnish merchant ship while entering Hamburg, West Germany, in rain and fog. The collision opens an eight-foot-square hole above the waterline of the frigate.

22 Marzo 1975 - Brown's Ferry, Decatur, Alabama (Usa). Per cercare la presenza di correnti d'aria nella cabina di comando della centrale. viene usata una candela che, a sua volta, appicca il fuoco a tutti i cavi elettrici. Si bloccano tutti i sistemi di sicurezza. Si riesce a rimediare fortunatamente (per un resoconto più dettagliato di questo grave incidente vedi il «Corriere della sera» del 2/7/1977, p. 3.). Secondo il calcolo delle probabilità questo tipo di incidente può verificarsi in un caso su mille miliardi!

24 Marzo 1975 - (incidente unità navale nucleare) Atlantic: The USS Dace (SSN-607) collides with a fishing vessel while surfaced in the Narraganset Bay area off Rhode Island. There was no reported damage to the submarine.

26 Marzo 1975 - (incidente unità navale nucleare) Pacific: The USS Holland (AS-32) suffers a Class Alpha fire caused by spontaneous combustion of fiber glass materials in a sanding room while undergoing overhaul at the Puget Sound Naval Shipyard, Washington.

8 Aprile 1975 - (incidente unità navale nucleare) Atlantic: The USS Meredith (DD-890) suffers an explosion and fire in a fresh water tank in the forward fire room while undergoing overhaul in Jacksonville, Florida, killing two civilian workers.

8 Aprile 1975 - (incidente unità navale nucleare) Atlantic: The USS Koelsch (FF-1049) experiences flooding in the diesel generator room when an air conditioning main ruptures while in Mayport, Florida.

23 Aprile 1975 - (incidente unità navale nucleare) Pacific: The USS Snook (SSN-592) becomes entangled in a net of a probable Soviet fishing trawler while submerged at a depth of 150 feet in a submarine diving area 30 miles off San Francisco, California. The Snook is pulled to periscope depth immediately a stern of the fishing ship, however it breaks free and clears the area. About 25 Soviet fishing vessels are in the area when the incident occurs.

29 Aprile 1975 - (incidente unità navale nucleare) Atlantic: The USS Patterson (FF-1061) experiences flooding in a machinery room when an air compressor saltwater cooling line ruptures while in upkeep in Mayport, Florida.

25 Maggio 1975 - (incidente unità navale nucleare) : A lengthy story in the New York Times details a secret U.S. Navy submarine intelligence gathering program code-named Holystone. Using specially equipped submarines the Navy has spied on the Soviet Union and other countries since the early 1960s, at times within their three-mile limit. Several accidents resulted from these missions including the damaging of a U.S. submarine which surfaced under a Soviet ship during a Soviet fleet exercise as well as accidents listed at 12/31/65, 12/31/67, 12/31/68, 10/31/69, 11/14/69, 3/31/71, 5/1/74, and 12/31/74. Further exposes of the Holystone program are in the Washington Post (1/4/74), New York Times (7/4 and 7/6/75), Village Voice (2/16/76), Chicago Tribune(12/4/77) and Baltimore Sun (4/18/81). According to the reports, most of the submarines involved in Holystone missions were Sturgeon class nuclear-powered attack submarines, which also were armed with nuclear weapons.

10 Giugno 1975 - (incidente unità navale nucleare) Pacific: The USS Kitty Hawk (CV-63) suffers major flooding in its Number 1 machinery room while 135 nautical miles north west of Wake Island, crossing to the western Pacific.

15 Giugno 1975 - (incidente unità navale nucleare) Atlantic: A boiler flareback explosion damages two boilers and adjacent uptakes of the USS Independence (CV-62) while moored at Norfolk, Virginia.

20 Giugno 1975 - (incidente unità navale nucleare) Atlantic: The Navy announces eight minor fires that occurred aboard the USS John F. Kennedy (CV-67) earlier in the week may have been set by a sailor in an effort to forestall its departure from Norfolk, Virginia, on a seven-month deployment.

5 Agosto 1975 - (incidente unità navale nucleare) Atlantic: The Royal Navy Reserve minesweeper HMS Killiecrankie rams yacht, sinking it, and damages two other pleasure craft in Great Yarmouth harbor, U.K., when the minesweeper tries to turn while leaving Yarmouth at the end of a courtesy visit.

7 Agosto 1975 - (incidente unità navale nucleare) Atlantic: The USS Dahlgren (DDG-43) collides with the Panamanian freighter Eurybates about three-and-one-half miles east of Port Colon in the Panama Canal Zone. There are no injuries.

15 Agosto 1975 - France: Two bombs exploded at Mt. d'Arree NPS in Brittany: one at far end of canal between plant and cooling lake, the other damaging a air chimney for plant buildings in the compound. The reactor was shut down temporarily for inspection

22 Settembre 1975 - Ionio meridionale, Italia. La portaerei americana Kennedy si scontra con l'incrociatore americano Belknap a duecento miglia da Taranto, nello Ionio meridionale. Scoppia un incendio che sfiora le testate nucleari dei missili Terrier e parte uno dei più alti livelli di SOS nucleare, denominato 'broken arrow'. L'incidente è reso noto solo nel 1989. "Se le fiamme avessero raggiunto le testate le possibilità sarebbero state due: o le testate atomiche sarebbero esplose con effetti facilmente immaginabili, oppure la nave sarebbe affondata in zona frequentata dai pescherecci italiani, con conseguenze ambientali molto gravi" (William Arkin, esperto di questioni militari).

29 Settembre 1975 - (incidente unità navale nucleare) Atlantic: The USS Albany (CG-10) suffers a Class Bravo fire after a fuel oil strainer explosion east of Norfolk while en route to northern Europe, killing one. On 1 October the Albany rejoins the Second Fleet task group headed for northern Europe, with repairs scheduled to take place in Europe.

Ottobre/Novembre 1975 - Apra Harbor, isola di Guam. Il sommergibile USS Proteus scarica in mare acqua di raffreddamento radioattiva. A Geiger counter at two of the harbor's public beaches showed 100 millirems/hour, fifty times the allowable dose.

23 Ottobre 1975 - Yucca Flats, Nevada. A canister containing a nuclear weapon's fissile core fell 40 feet to the bottom of a shaft during preparations for an underground nuclear test at the Nevada Test Site. The warhead had a yield of less than 20 kilotons. Although the warhead did not detonate and there was no leakage of radioactive material, 11 Nevada Test Site workers were injured. The device was to be detonated as part of a series of underground tests code-named "Peninsula." The incident was verified by U.S. Energy Research and Development Administration (ERDA) spokesman, David Miller. According to the ERDA, safety mechanisms built into the warhead precluded the possibility that the device could have accidentally detonated.

24 Ottobre 1975 - (incidente unità navale nucleare) Atlantic: The USS Farragut (DDG-37) is momentarily grounded while departing Den Helder, Netherlands, for Brest, France. Both sonar domes are damaged and the ship proceeds at reduced speed.

12 Novembre 1975 - (incidente unità navale nucleare) Atlantic: The Royal Navy frigate Achilles collides with the tanker Olympic Alliance in thick fog in the English Channel, no reported injuries.

19 Novembre 1975 - Gundremmingen, Germania. Muoiono 2 operai nel reattore di Gundremmingen. I due dovevano riparare una valvola, ma all'improvviso escono 4 litri di vapore radioattivo ad una pressione di 60 atmosfere e ad una temperatura di 270°C. Nessuna possibilità di salvezza per i due.

20 Novembre 1975 - (incidente unità navale nucleare) Atlantic: The USS Independence (CV-62) is in a minor collision with the USS Denebola (AF-56) during night replenishment in the North Sea.

21 Novembre 1975 - (incidente unità navale nucleare) Atlantic: The USS Belknap (CG-26) is involved in an oil spill during refueling with the USS Waccamaw (T-AO-109) in the Ionian Sea about 25 nautical miles from Italy.

22 Novembre 1975 - (incidente unità navale nucleare) Atlantic: The USS John F. Kennedy (CV-67) and the USS Belknap (CG-26) collide in rough seas at night during air exercises about 70 miles east of Sicily. The overhanging flight deck of the carrier cuts into the superstructure of the cruiser setting off fires on the Belknap which are not controlled for two-and-one-half hours on account of frequent flarebacks. The commander of Carrier Striking Forces for the U.S. Sixth fleet, reporting to higher commands shortly after the collision, declares a possible nuclear weapons accident -- a Broken Arrow -- stating there was a "high probability that nuclear weapons [W45 Terrier missile warheads] on the USS Belknap were involved in fire and explosions," but there were "no direct communications with the Belknap at this time," and "no positive indications that explosions were directly related to nuclear weapons." He also notes that casualties recovered thus far show no exposure to radiation. Nonetheless, monitoring and medical teams were "alerted to the possibility of contamination." He adds that the nuclear weapons on board the Kennedy were not affected. An hour after the Broken Arrow message was sent the USS Claude V. Ricketts (DDG-5), alongside the Belknap fighting the fire, reported that Belknap personnel said "no radiation hazard exists aboard." Six people aboard the Belknap and one aboard the Kennedy are killed. The Belknap suffers serious damage, is put out of commission, and towed back to the U.S. to effect repairs lasting four years. It returns to the fleet in 1980. Smaller fires and other damage on the Kennedy are quickly contained and the carrier continues operations. 22 Novembre 1975 - Italia. Due navi americane, la portaerei J.F. Kennedy e l'incrociatore Belknap, a bordo della quale vi erano armi nucleari, (come testimonia l'allarme in codice "broken arrow" che fu lanciato dal comandante della sesta flotta americana e che indica appunto un incidente che vede coinvolte armi nucleari) si scontrano al largo della Sicilia. La Belknap prende fuoco e viene gravemente danneggiata, ma l'incendio è fermato a pochi metri dal magazzino che contiene le armi atomiche.

24 Novembre 1975 - (incidente unità navale nucleare) Pacific: An ASROC motor prematurely ignites seriously burning one man while the USS Richard S. Edwards (DD-950) is en route to the Pacific Missile Range Facility, Barking Sands, Kauai, from Pearl Harbor, Hawaii. A manufacturing defect in one of the rocket motor components is determined to be the accident's cause.

25 Novembre 1975 - (incidente unità navale nucleare) Indian: A plane attempting to land on the USS Midway (CV-41) strikes the ramp, bolts, impacts the barricade, and strikes another plane during post- "Midlink" exercises in the Indian Ocean. Flyingdebr is injures two crewmen.

6 Dicembre 1975 - (incidente unità navale nucleare) Pacific: The USS Haddock (SSN-621) develops a leak and floods during a deep dive while on a test run near Hawaii. The U.S. Navy confirms the incident, but denies the vessel is unsafe as crew members had charged in late October. A number of enlisted men had protested sending the ship to sea, claiming it had cracks in the main cooling piping, leaks, and malfunctions and deficiencies in other systems, including the steering mechanism. The Navy replied that in accordance with strict safety procedures any problems are corrected before the ship goes to sea.

7 Dicembre 1975 – Lubmin (Repubblica Democratica Tedesca). Un cortocircuito nell'impianto della Centrale di Lubmin, sul litorale baltico nella Germania Orientale, provoca una parziale fusione del nucleo del reattore.

15 Dicembre 1975 - (incidente unità navale nucleare) Atlantic: The USS Saratoga (CV-60) and the USS Mississinewa (AO-144) are in a minor collision during underway replenishment off the Florida coast.

16 Dicembre 1975 - (incidente unità navale nucleare) Atlantic: The USS Inchon (LPH-12) and the USS Caloosahatchee (AO-98) are in a minor collision during refueling in rough seas west of Italy.

20 Dicembre 1975 - (incidente unità navale nucleare) Atlantic: The USS Santa Barbara (AE-28) suffers a Class Alpha fire while moored at Charleston, South Carolina, without crew and ammunition in preparation for regular overhaul.

31 Dicembre 1975 - (incidente unità navale nucleare) Atlantic: Around 1975, according to The Virginian-Pilot and The Ledger-Star, the USS California (CGN-36) spills 15 to 20 gallons of primary coolant while the ship is at the Norfolk Naval Base, Virginia.

1976 - Largo della Sicilia, Italia. Scontro tra due navi statunitensi (portaerei J.F.Kennedy ed incrociatore Belknap, entrambe dotate di armi nucleari) durante un'esercitazione al largo della Sicilia, con rischio di grave incidente nella Santa Barbara nucleare. In quell'occasione fu lanciato l'allarme Broken Arrow, il più grave secondo la classificazione USA.

1976? - USA: incidenti da fluoroscopio Skin injuries to two patients occurred as a result of fluoroscopy procedures. One patient received an estimated 2200 rads during an angiogram, the other an estimated 5800 rads during placement of a pacemaker.

1976 - Windscale (GB). Il reattore contamina di Iodio 131 centinaia di miglia di territorio.

Gennaio 1976 - Gundremmingen, Germania. La neve caduta in abbondanza spezza le linee elettriche che convogliano l'energia prodotta nel reattore. Il reattore spento con la procedura d'emergenza, e soggetto ad una importante pressione interna, non previene l'apertura delle valvole di sicurezza e la liberazione di vapore radioattivo.

27 Gennaio 1976 - (incidente unità navale nucleare) Atlantic: While anchored in Augusta Bay, Sicily, the USS Spiegel Grove (LSD-32) is struck on the bow and starboard quarter by the Panamanian merchant vessel Honesty which had dragged anchor during winds of 50 knots.

27 Gennaio 1976 - (incidente unità navale nucleare) Atlantic: The USS Guadalcanal (LPH-7) exiting Augusta Bay, Sicily, goes aground on a peak of coral which pushes in areas on either side of the bow, but does not crack or hole the ship. On 30 January, with cargo, personnel, helicopters, and fuel off-loaded to assist the effort, the ship is refloated.

1 Febbraio 1976 - La Maddalena, Italia. Secondo la stampa locale, si sarebbero registrati a La Maddalena cinque casi di cranioschisi nelle nascite degli ultimi tempi. La pesante incidenza della mortale malformazione cranica dei neonati è imputabile ad agente esterno, tra i quali si affaccia l'ipotesi della radioattività.

13 Febbraio 1976 - (incidente unità navale nucleare) Atlantic: The USS Iwo Jima (LPH-2) experiences a boiler casualty while participating in a "Rum Punch" exercise in the Caribbean. The casualty limits the ship's speed to 15 knots and half power. An embarked Royal Netherlands Marine Unit was airlifted to Roosevelt Roads, Puerto Rico, and the helicopter carrier got underway for New Orleans.

29 Febbraio 1976 - (incidente unità navale nucleare) Atlantic: The USS Sellers (DDG-11) conducted an emergency underway at Iskenderun, Turkey, as heavy weather made its position at the NATO fuel pier untenable. The destroyer suffered some scraping and minor damage along the main deck but was able to clear without injuries to crew or damage below the waterline.

29 Febbraio 1976 - (incidente unità navale nucleare) Pacific: The USS New Orleans (LPH-11), crossing from the western Pacific to San Diego, California, suffers vibrations at speeds above ten knots. It is discovered that one blade is missing from the four-bladed screw. On 2 March it alters course from California to Hawaii as the damage impedes its progress.

21 Marzo 1976 - (incidente unità navale nucleare) Pacific: The British iron ore carrier Cape Ortegale is hit by a rocket, believed to be fired by a Japanese defense force aircraft during an exercise.

30 Marzo 1976 - (incidente unità navale nucleare) Atlantic: The USS Elmer Montgomery (FF-1082) suffers a fire in a storeroom while in port at Norfolk, Virginia. The ship's crew with assistance from the USS Mitscher (DDG-35) and the base fire department extinguish the fire. No personnel are injured and the damage is minor.

16 Aprile 1976 - (incidente unità navale nucleare) Atlantic: The USS Albany (CG-10) experiences a nuclear weapons incident -- Dull Sword -- when during handling of TALOS nuclear warhead trainers a top-side hoist fails as the ship is finishing repairs and up keep at the Norfolk Naval Shipyard, Virginia. On 4 May 1976 a TALOS safety working group convenes aboard the Albany to observe and evaluate modifications made to the hoist as a result of the accident.

1 Maggio 1976 - (incidente unità navale nucleare) Arctic: Early May -- a Norwegian fishing vessel in international waters off Murmansk snags a Soviet nuclear-powered attack submarine's fin at about 450 feet below the surface. The Soviet boat surfaced and the fisherman could see the Soviet crewmen cutting at the entangling cables with hammer and chisels. The submarine was later towed toward Murmansk by Soviet rescue ships.

1 Maggio 1976 - (incidente unità navale nucleare) Atlantic: The Sixth Fleet flagship USS Little Rock (CG-4) experiences a casualty in the main engine lube oil system in the Tyrrhenian Sea. On 2 May it enters Naples for repairs.

1 Maggio 1976 - (incidente unità navale nucleare) Pacific: In May fuel oil leaks into the lower level of the ballistic missile magazine aboard the USS Proteus (AS-19) while the ship is in Apra Harbor, Guam. According to the Navy, the leak was detected by magazine personnel and stopped.

2 Maggio 1976 - (incidente unità navale nucleare) Atlantic: The Royal Navy nuclear-powered attack submarine HMS Warspite suffers a fire in a diesel generating room while berthed in Royal Seaforth Dock, Crosby on the Mersey, U.K., injuring three. The Ministry of Defense says "There is absolutely no nuclear hazard." Originally it is anticipated that its patrol would be delayed one week. However, in January 1979 it is reported that the fire was caused by a failure of a coupling on a lubricating oil pipe, which allowed oil to be sprayed over a diesel generator. And, that repairs were still believed to be continuing at a cost of 5,194,000 pounds sterling.

8 Maggio 1976 - (incidente unità navale nucleare) Atlantic: The USS Corry (DD-817) while sailing outbound on the Delaware River is struck on the starboard side by the West German merchantman Mormannia. The Corry suffers minor hull damage above the waterline with no personnel injuries.

12 May 1976 - Maine, USA: Two bombs exploded in the headquarters of the Central Maine Power Company in Augusta; a Fred Hampton Unit of the People's Forces claimed responsibility and demanded end to expansion of nuclear powerplants

31 Maggio 1976 - (incidente unità navale nucleare) Atlantic: The USS Vesole (DD-878) suffers a fire while moored alongside a pier at Taranto, Italy. It was started by a yard worker welding on the base of the Number 1 stack. Electrical cables were shorted and the destroyer's operational capability was affected. There were no injuries.

9 Giugno 1976 - (incidente unità navale nucleare) Pacific: The USS Wabash (AOR-5) and USS Flint (AE-32) collide while conducting towing exercises about 900 nautical miles north west of Hawaii. Both ships continue on ward to a western Pacific deployment.

1 Luglio 1976 - (incidente unità navale nucleare) Arctic: The Norwegian fishing trawler Sjovik snags the bow of a Soviet November class nuclear-powered attack submarine and is dragged backward for about a mile in the Barents Sea north of the Soviet naval base at Murmansk. The submarine surfaces, cuts and proceeds on the surface toward Murmansk.

2 Luglio 1976 - (incidente unità navale nucleare) Atlantic: A fire breaks out in the main engine room of the USS Kilauea (AE-26), while it is drydocked for overhaul at Richmond, Virginia.

27 Luglio 1976 - USA. Esplosione di una carica da 20-150 chilotoni nel sottosuolo del Nevada. Il giorno seguente, la città di Tang-shan (Cina) e 800.000 persone furono distrutte da un sisma che fu valutato di magnitudine 8,2 nella scala Richter.

Agosto 1976 - An explosion at the Hanford site Plutonium Finishing Plant contaminated several workers. The plant converted plutonium nitrate solutions into metallic form for nuclear weapons production facilities. The explosion blew out a quarter-inch-thick lead glass window that shielded workers from radioactive materials. One 64-year-old worker, Harold McCluskey, was showered with nitric acid and radioactive pieces of glass. The worker inhaled the largest dose of ²⁴¹Am ever recorded. He inhaled about 500 times the U.S. government occupational standards for the element. The worker was placed in isolation for five months and given an experimental drug to flush the isotope from his body. By 1977, his body's radiation count had fallen by about 80 percent. When the worker returned home, friends and church members avoided him. His minister finally had to tell people it was safe to be around him. He died of natural causes in 1987 at age 75.

11 Agosto 1976 - (incidente unità navale nucleare) Atlantic: The Royal Navy patrol vessel HMS Reward collides with the freighter Plainsman and sinks off the coast of Scotland. All 40 crewmen are rescued.

25 Agosto 1976 - (incidente unità navale nucleare) Atlantic: The USS Conyngham (DDG-17) and USS Josephus Daniels (CG-27) are in a minor collision during "National Week 21" exercises in the western Mediterranean.

25 Agosto 1976 - (incidente unità navale nucleare) Pacific: The USS Pollack (SSN-603) snags the nets of Japanese fishing boats in the eastern channel of the the Tsushima Strait. Two boats cut away and abandon their nets. The Pollack suffers no major damage and there is no known damage to the fishing boats.

28 Agosto 1976 - (incidente unità navale nucleare) Atlantic: A Soviet Echo II class nuclear-powered cruise missile submarine strikes the USS Voge (FF-1047) with its sail on the port quarter below the helicopter hangar, about 150 miles south west of Souda Bay, Crete. The submarine departs the area under its own power to the Kithera Anchorage off Greece escorted by Soviet ships. The Voge suffers split bulkheads, buckled plating, and a damaged propeller and is towed to Souda Bay by the Moinster (FF-1097) and Preserver (ARS-8). The submarine damages its sail. In September the Voge is towed to Toulon, France. On 7 September the U.S. State Department announces that the U.S. and Soviet Union had exchanged notes, each blaming the other for the collision.

9 Settembre 1976 - (incidente unità navale nucleare) Atlantic: The Turkish diesel submarine Dumlupinar and the freighter Fizik Vavilov collide in the Dardanelles, no reported casualties.

13-15 Settembre 1976 - URSS. Esecuzione di test nucleari sotterranei. Il 16 settembre un terremoto (7,7 Richter) rade al suolo la città iraniana di Tabas, causando 25.000 vittime

14 Settembre 1976 - (incidente unità navale nucleare) Atlantic: The USS Bordelon (DD-881) experiences steering control difficulties during refueling and collides with the USS John F. Kennedy (CV-67) 75 miles north west of Scapa Flow, Scotland, causing top side damage to the Bordelon and injuring six. Damage to the Kennedy is minor. The Bordelon proceeds to Plymouth, U.K., for repairs before going to the United States. The Navy subsequently decommissions the ship because repairs would be too expensive.

14 Settembre 1976 - (incidente unità navale nucleare) Atlantic: The USS Raleigh (LPD-1) leaves Moorehead City, North Carolina, after a week's delay caused by inoperative feed pumps to participate in the "Teamwork" exercises off Norway. While crossing the Atlantic, the ship experiences further engineering problems, causing the ship to be diverted to Plymouth, U.K. The ship arrives 24 September for two weeks of repairs to the feed pumps before sailing on 9 October.

20 Settembre 1976 - (incidente unità navale nucleare) Atlantic: The Royal Navy frigate HMS Mermaid and the minesweeper HMS Fittleton collide during the NATO exercise "Teamwork 76" in the North Sea. The Fittleton capsizes and sinks, killing 12.

22 Settembre 1976 - Comunicato stampa del Comando Marina italiano di La Maddalena diramato nella serata. Il RAY è entrato nella rada della Maddalena il mattino di oggi per riparazioni nella parte prodiera dello scafo. L'autorità militare italiana conferma che l'incidente non avrebbe impegnato l'apparato di propulsione e che non sussisterebbe pericolo di inquinamento marino.

Rispondendo ad un cronista locale, il Commodoro Shelton, comandante della base americana di La Maddalena, afferma che il RAY, con un solo ferito, sarebbe giunto a S. Stefano nella tarda serata di mercoledì 21. Appare clamorosa la contraddizione con la nota della Marina Italiana sulla data di arrivo a S. Stefano del RAY.

24 Settembre 1976 - (incidente unità navale nucleare) Atlantic: The Royal Navy destroyer HMS Glasgow suffers a fire while being fitted out at Swan Hunter Tyneside yard, Newcastle-Upon-Tyne, U.K., killing eight workmen.

Ottobre 1976 -Tallin (Urss). Salta in aria una centrale atomica sotterranea: almeno cento persone muoiono. Le autorità sovietiche negano, ma dopo il 25 ottobre, e per una settimana almeno, un quotidiano russo pubblica una decina di necrologi ogni numero (Per un resoconto più dettagliato di questo incidente vedi «Panorama» de 30/11/1976, p. 145.).

1 Ottobre 1976 - (incidente unità navale nucleare) Atlantic: According to raw CIA intelligence reports, during October the launch compartment of a Soviet nuclear submarine of unknown class catches fire in the Atlantic. Three officers are reported killed. The submarine is able to return to port under its own power.

8 Ottobre 1976 - (incidente unità navale nucleare) Pacific: A Japanese fishing vessel snags a Soviet Charlie class nuclear-powered cruise missile submarine off the Kamchatka Peninsula. The fishing boat is dragged backward until it reels in its nets and the submarine surfaces. The nets are cut to free the submarine.

2 Novembre 1976 - (incidente unità navale nucleare) Pacific: A major explosion takes place in a boiler of the USS Ponchatoula (AO-148) in port at Pearl Harbor, Hawaii. The explosion blows out the side and back wall of the Number 2 boiler.

19 Dicembre 1976 - (incidente unità navale nucleare) Pacific: A F-14 Tomcat aircraft misses a landing on the USS Enterprise (CVN-65), and its wingtip strikes two other aircraft on the flight deck before it veers out of control and crashes into the South China Sea.

31 Dicembre 1976 - (incidente unità navale nucleare) : According to raw CIA intelligence reports, during 1976 a sailor who had served on board a Soviet nuclear-powered ballistic missile submarine of unknown class dies of "excessive exposure to radiation." He was exposed to radiation on board through his own negligence at least a year prior to his death and was in and out of hospitals before being permanently hospitalized in 1975.

31 Dicembre 1976 - (incidente unità navale nucleare) Atlantic: In 1976 a barge carrying 500-lb. bombs breaks away from the USS Detroit (AOE-4) and floats down the York River, Virginia. The barge was stopped after 30 minutes and no damage was reported.

1977 – Spagna. Quattro terroristi dell'ETA attaccano un posto di controllo con l'intenzione di danneggiare il reattore nucleare di Lemoniz

1977 - La Plata, Argentina: incidente radioterapico Three individuals were significantly exposed to x-rays from a crystallography set because the shutter was removed. One operator received a dose to the hands of 1,000 rad, producing radiation burns.

1977 - Bulgaria. Nella centrale di Kozloduy, a causa di un terremoto, salta la strumentazione di controllo del reattore. I tecnici riescono a fermare la reazione

2 Gennaio 1977 - (incidente unità navale nucleare) Indian: The USS Mizar (T-AGOR-11) suffers a casualty to the port main propulsion drive shafting while en route to Karachi, Pakistan, to participate in Arabian Sea survey operations.

2 Gennaio 1977 - (incidente unità navale nucleare) Indian: A Pakistani midget submarine is lost off Karachi, Pakistan, killing eight.

12 Gennaio 1977 - (incidente unità navale nucleare) Atlantic: The USS Franklin D. Roosevelt (CV-42) collides with the Liberian freighter Oceanus as the Roosevelt proceeds south through the Strait of Messina. Both ships are able to proceed to port under their own power.

17 Gennaio 1977 - (incidente unità navale nucleare) Atlantic: An LCM-6 landing boat from the USS Trenton (LPD-14) carrying more than 100 marines and sailors returning from liberty over turns in a collision with the Spanish freighter Uriea in Barcelona harbor, Spain, killing 48.

8 Febbraio 1977 - (incidente unità navale nucleare) Pacific: A minor boiler explosion occurs aboard the USS Fanning (FF-1076) as the ship operates 15 miles from San Francisco, California, injuring three.

8 Febbraio 1977 - (incidente unità navale nucleare) Atlantic: A fire breaks out in the engine room of the USS Preserver (ARS-8) near the Bahamas. The ship is towed by the USS Bowen (FF-1079) to Mayport, Florida, for repairs.

11 Febbraio 1977 - (incidente unità navale nucleare) Atlantic: The USS Barnstable County (LST-1197) collides with the moored Liberian ship Pountes while clearing berth under pilot control at Curaçao, Netherlands Antilles, resulting in minor damage.

20 Febbraio 1977 - (incidente unità navale nucleare) Pacific: The USS Ranger (CV-61) experiences a Class Alpha fire in the anchor machinery room while drydocked at Puget Sound Naval Shipyard, Washington.

22 Febbraio 1977 - Jaslovské Bohunice, Cecoslovacchia: incendio. Operators neglected to remove moisture absorbing materials from a fuel rod assembly before loading it into the KS 150 reactor at power plant A-1. The accident resulted in damaged fuel integrity, extensive corrosion damage of fuel cladding and release of radioactivity into the plant area. The plant was decommissioned following this accident.

12 Marzo 1977 - (incidente unità navale nucleare) Pacific: The USS Mauna Kea (AE-22) loses propulsion because of a mechanical failure in the Number 1 boiler while en route from Guam to Okinawa. It enters Apra harbor, Guam, the next day under tow.

16 Marzo 1977 - (incidente unità navale nucleare) Atlantic: The USS Manley (DD-940) suffers a flash-back in a mount during gunnery exercises off Guantanamo Bay, Cuba, injuring four. The mount is placed out of commission due to fire and water damage when a second powder casing explodes after the mount is evacuated.

18 Marzo 1977 - (incidente unità navale nucleare) Pacific: The USS Hepburn (FF-1055) suffers a Class Alpha fire caused by spontaneous combustion of refuse while off San Diego, California.

18 Marzo 1977 - (incidente unità navale nucleare) Atlantic: The Royal Navy coastal minesweeper HMS Maxton accidentally fires at the Royal Navy frigate HMS Achilles off the Scottish coast when live shells instead of blanks are used in a practice firing. Two shells hit and cause moderate damage to the Achilles.

20 Marzo 1977 - (incidente unità navale nucleare) Atlantic: The USS Dyess (DD-880) suffers a wardroom fire apparently caused by arson while in port at Mayport, Florida. There is minor damage.

24 Marzo 1977 - (incidente unità navale nucleare) : An inquest records accidental death verdicts for three sailors who died in an engine room fire aboard the Royal Navy frigate HMS Ashanti.

Aprile 1977 - El Ferrol (Spagna). Fuga radioattiva. Più di 100 persone contaminate.

2 Aprile 1977 - Atucha, Argentina: incidente radioterapico A worker at a nuclear reactor was not wearing lead gloves and cut his hand on the edge of a plug. The wound was contaminated by 0.1 microcuries of radioactive material producing a localized radiation dose over a period of several years. The incident was identified when the worker later entered a controlled area and the contamination was detected. Surgery was eventually required in 1985 to remove the contamination.

7 Aprile 1977 - (incidente unità navale nucleare) Atlantic: All nine ships in U.S. Navy Task Group 21.2 including the USS Independence (CV-62) suffer varying amounts of damage when they encounter a storm with 20-foot seas about 1,000 miles west of Rota, Spain. Some Independence planes land at Lajes Air Base in the Azores.

20 Aprile 1977 - (incidente unità navale nucleare) Atlantic: The USS Independence (CV-62) and the USS Truckee (AO-147) collide in the Tyrrhenian Sea during underway replenishment when the Truckee loses steering control.

14 Maggio 1977 - (incidente unità navale nucleare) Indian: The USS Neches (T-AO-183) runs aground in the inner anchorage at Port Suez, Egypt, while waiting a pilot. It is refloated three days later following four failed attempts.

19 Maggio 1977 - (incidente unità navale nucleare) Indian: The USS Mizar (T-AGOR-11) suffers an engine room explosion and fire while west of Sumatra, Indonesia. The ship proceeds on one engine to Singapore for repairs.

29 Maggio 1977 - (incidente unità navale nucleare) Atlantic: The USS Sampson (DDG-10) runs aground at the entrance to San Juan, Puerto Rico, but is cleared within an hour by the ship's engines and one tug. The sonar dome is slightly damaged.

6 Giugno 1977 - (incidente unità navale nucleare) Atlantic: Several U.S. Navy ships, including the USS California (CGN-36) and the USS El Paso (LKA-117), part their moorings and suffer minor damage during high winds in the Norfolk, Virginia, area.

15 Giugno 1977 - (incidente unità navale nucleare) Indian: The USS Trippe (FF-1075) suffers damage to its sonar dome during a search and rescue operation for a crashed Kuwaiti helicopter in the Persian Gulf.

7 Luglio 1977 - USA. Gli Stati Uniti annunciano di aver testato una bomba a neutroni. La decisione del presidente Jimmy Carter sarà disapprovata dalla popolazione ed il programma sarà abbandonato nell'aprile 1978.

12 Luglio 1977 - (incidente unità navale nucleare) Atlantic: The USS Rich (DD-820) and the USS Caloosahatchee (AO-98) collide north of the U.S. Virgin Islands following underway replenishment when the Rich loses steering control, strikes the oiler's starboard bow, and then continues across the bow raking the Rich's port side. The Rich is escorted to Mayport, Florida.

20 Luglio 1977 - (incidente unità navale nucleare) Atlantic: The USS Direct (MSO-430) is badly damaged by a two-hour engine room fire about 120 miles south east of Newport, Rhode Island, and is taken under tow to Newport where it arrives the next day.

22 Luglio 1977 - (incidente unità navale nucleare) Atlantic: The USS Henry L. Stimson (SSBN-655) fouls the fishing nets of a Spanish trawler while undergoing refresher training in the Rota area off Spain.

Agosto 1977 - Coulport, Gran Bretagna. While a Polaris missile was being lifted during re-alignment, the threads on a securing pin stripped due to the incorrect assembly of a hoist fixture. The missile fell a few inches but did not impact on any other object. There was no damage to missile or warheads.

6 Agosto 1977 - (incidente unità navale nucleare) Atlantic: A major Class Bravo fire occurs in the forward engine room of USS Hunley (AS-31) while the ship is part of the Atlantic Fleet. "The excellent response of the Duty Damage Control Party and action of other individuals on board limited the fire to the forward engine room and extinguished it 25 minutes from its start. Fire, smoke, and/or firefighting water damaged the Number 2 main engine, Numbers 1 and 2 main propulsion generators, Numbers 1 and 2 ship service generators, Numbers 1 and 2 low pressure air compressors, Number 2 force draft blower, Number 2 evaporator and salinity indicating system, plus runs of electrical cable in the vicinity of the fire. The forward switchboard, 1S, was grounded by firefighting water rendering the forward part of the ship without normal electrical power."

23 Agosto 1977 - (incidente unità navale nucleare) Atlantic: While the USS Saratoga (CV-60) is en route to the Strait of Messina, an aerosol can explodes in the Number 2 incinerator of the ship, causing a fire which threatens the aircraft of Hangar Bay Number 2. According to the Navy, "The fast and professional reaction of the crew and the decision to call away GQ [General Quarters] can be directly credited for the successful handling of the potential disaster."

Settembre 1977 - Rockaway, New Jersey, USA: incidente da irradiazione One person was briefly exposed to a cobalt-60 source in an industrial irradiation facility before he realized the source was exposed, after which he left immediately. The accident resulted from failure of a safety interlock designed to lower the source into a safety pool when personnel are present. He developed acute radiation sickness from an exposure of about 200 rem.

8 Settembre 1977 - Kamchatka, Russia. Il sottomarino sovietico K-171 sgancia accidentalmente un'ogiva nucleare. Una vasta ricerca con diverse navi ed aerei, ne permette il ritrovamento.

20 Settembre 1977 - (incidente unità navale nucleare) Atlantic: The USS Ray (SSN-653) strikes the bottom south of Sardinia, Italy, damaging its bow area. The Ray surfaces and proceeds to La Maddalena naval base on Sardinia escorted by the USS Grayling (SSN-646).

22 Settembre 1977 - Sardegna, Italia. Il sommergibile d'attacco Ray del X squadrone della VI flotta Usa urta contro il fondale nel sud della Sardegna. Secondo il Pentagono non ci sarebbero stati danni al propulsore atomico e l'hunter killer avrebbe raggiunto la base di La Maddalena per le necessarie riparazioni. L'incidente mette a nudo la

La Marina italiana, solo a distanza di 48 ore, ha modo divisionare il danno. Eclatante la violazione degli accordi

internazionali secondo i quali i soccorsi e le riparazioni ai natanti con motori atomici, devono avvenire al largo delle coste, in acque internazionali.

29 Settembre 1977 - (incidente unità navale nucleare) Atlantic: The USS Archerfish (SSN-678) and USS Philadelphia (SSN-690) collide stern to stern at slow speeds at the Groton submarine base, Connecticut, with minor damage reported.

6 Ottobre 1977 - (incidente unità navale nucleare) Atlantic: The USS Saratoga (CV-60) collides with the Austrian container ship Ville d'Orient in the Strait of Messina with no injuries and minor damage reported.

10 Ottobre 1977 - Oregon, USA: Bomb exploded next to visitor center at Trojan NPS, with Environmental Assault Unit of the New World Liberation Front claiming responsibility

12 Ottobre 1977 - (incidente unità navale nucleare) Atlantic: The USS Sealift Atlantic (T-AO-172) becomes dead in the water about 800 miles north east of Puerto Rico after suffering a propeller casualty. On 15 October the ship is placed under tow by the USS Gear (T-ARS-34) headed toward Puerto Rico.

27 Ottobre 1977 - (incidente unità navale nucleare) : A seaman is acquitted of starting fires on the Royal Navy frigate HMS Gurkha.

24 Novembre 1977 - (incidente unità navale nucleare) Atlantic: The Washington Post reports NATO sources believe that the Soviet Navy is experiencing trouble with its Yak-36 V/STOL aircraft after an incident where the flight deck of the Kiev assault ship was set on fire by one of the aircraft. The Kiev itself had only been at sea for two weeks since deployment to the Northern Fleet in Fall 1976.

28 Novembre 1977 - Germania Ovest. An army CH-47 carrying nuclear warheads on a logistical move crashed shortly after takeoff when a fire caused the helicopter to lose power to an engine. The fire was extinguished and the weapons were safely removed to a storage site.

4 Dicembre 1977 - (incidente unità navale nucleare) Atlantic: The USS W.S. Sims (FF-1059) loses power after a boiler casualty results in the loss of a generator during training 70 miles south of Bermuda. The frigate is able to get underway for Mayport, Florida, after the USS Ainsworth (FF-1090) rigs emergency power from alongside.

6 Dicembre 1977 - (incidente unità navale nucleare) Pacific: The USS Pintado (SSN-672) sustains damage to the top of its rudder in a minor collision with a South Korean Navy ship during exercises off Korea. The Pintado initiated emergency deepdive procedures when the surface ship turned toward the submarine at close range.

18 Dicembre 1977 - Spain: 4 ETA terrorists attack guard post at Lemoniz NPS, with one terrorist killed; ETA later claimed to have planned to blow up the reactors.

31 Dicembre 1977 - (incidente unità navale nucleare) Atlantic: According to raw CIA intelligence reports, in 1977 about 12 Soviet naval officers serving on a nuclear-powered submarine in the Atlantic return to Leningrad via an Aeroflot flight from Canada. The reason for the return was not announced but it was known at the time that these officers were taken from a Soviet submarine in the Atlantic by a Soviet fishing trawler and subsequently transported to Canada where they boarded the plane. The CIA sources suggest this may have been a medical emergency connected with radiation exposure.

31 Dicembre 1977 - (incidente unità navale nucleare) Indian: According to raw CIA intelligence reports, in 1977 a Soviet nuclear-powered submarine suffers an internal fire while in the Indian Ocean. The submarine is forced to surface in an attempt to fight the fire which takes several days to extinguish. A Soviet trawler subsequently tows the submarine to a port near Vladivostok.

31 Dicembre 1977 - (incidente unità navale nucleare) Atlantic: Around 1977, according to a report in The Virginian-Pilot and The Ledger-Star, 40 to 50 gallons of primary coolant spill from the USS California (CGN-36) while the ship is in Norfolk, Virginia.

31 Dicembre 1977 - (incidente unità navale nucleare) Atlantic: Sometime during 1976-77, the Royal Navy nuclear-powered ballistic missile submarine HMS Repulse suffers a fire, causing 200,000 pounds sterling damage.

1978 – Spagna. Bomba dell'ETA nel generatore di vapore di una centrale nucleare in costruzione. “morti e 14 feriti

1978 - Canada. Il satellite Cosmos 954, un satellite Rorsat sovietico, con materiale radioattivo a bordo, cade per avaria spandendo i suoi pezzi su una vasta porzione dei Territori del Nordovest canadesi, provocando un livello misurabile di inquinamento radioattivo. Fortunatamente la zona era pressoché disabitata, ma l'URSS dovette risarcire al Canada le spese sostenute per la ricerca e l'eliminazione dei frammenti inquinanti

1978 - Buenos Aires, Argentina: incidente da esposizione a fonte industriale An individual manually handled an iridium-192 industrial source, causing radiation burns to two fingers on the left hand from a localized dose of 1,200 to 1,600 rem.

Gennaio 1978 – Canada. Il satellite sovietico Cosmos 954 con a bordo 50 kg. di uranio altamente arricchito rientrò nell'atmosfera terrestre cadendo sui territori del Nord-Canada. Il Canada lanciò l'operazione Morning Light per la ricerca dei rottami del satellite.

12 Gennaio 1978 - (incidente unità navale nucleare) Atlantic: The French Navy escort vessel Duperre is pulled off by a tug after it runs aground in a storm off Brittany at night. The ship is towed into Brest, France.

15 Gennaio 1978 - (incidente unità navale nucleare) Atlantic: An A-7 Corsair II aircraft crashes upon landing aboard the USS Forrestal (CV-59) while the carrier operates about 50 miles off St. Augustine, Florida, killing one and injuring ten.

18 Gennaio 1978 - (incidente unità navale nucleare) Pacific: The USS Cree (ATF-84) is struck by three Mark 82 bombs near a target ship during exercises by planes of the USS Enterprise (CVN-65) off San Diego, California. Two explosions close to the Cree cause flooding while a third lodges in the starboard side and is later defused by an explosives ordnance disposal team. The tug is taken in tow after damage control teams control the flooding.

24 Gennaio 1978 - Canada. Il satellite di sorveglianza sovietico a propulsione nucleare Cosmos 954 con 50 kg. di uranio si sfracella al suolo. Una grande quantità di materiale si spande su una superficie di circa 124.000 kmq in una zona che si estende dal grande lago di Esclaves (degli Schiavi) fino a nord di Alberta e della provincia di Saskatchewan.

22 Febbraio 1978 - (incidente unità navale nucleare) Atlantic: The USS L.Y. Spear (AS-36) and the Liberian merchant ship Zephyros receive minor damage in a collision in the Mississippi River.

17 Marzo 1978 - Spain: Bomb exploded in steam generator of Lemoniz NPS killing 2 construction workers and injuring 14, ten minutes after ETA phone call warned of bomb; damage amounted to \$6,000,000

1 Aprile 1978 - (incidente unità navale nucleare) Indian : The USS Sealift Mediterranean (T-AO-173) runs aground off Rondo Island, Indonesia, about 30 nautical miles off Sumatra's north western tip.

3 Aprile 1978 - (incidente unità navale nucleare) Atlantic: The USS Fort Snelling (LSD-30) and the USS Waccamaw (T-AO-109) receive structural damage in a collision north of Corsica, France, when the Waccamaw loses steering control during refueling. Both proceed under their own power to Naples, Italy, for repairs.

25 Aprile 1978 - (incidente unità navale nucleare) Atlantic: The USS Concord (AFS-5) is badly damaged by a fire in its cargo spaces while moored at Palma de Majorca, Spain. One hundred and five people are treated for smoke inhalation and minor burns.

Maggio 1978 - Caorso (Italia). Il giorno del collegamento della centrale con la rete elettrica (26 maggio '78) si hanno fughe limitate nel reparto turbine dovute a valvole che non tengono ed ai cattivi calcoli di progettazione delle strutture portanti, come i tiranti che sostengono i tubi del gas radioattivo

3 Maggio 1978 - (incidente unità navale nucleare) Atlantic: The USS Dewey (DDG-45) suffers a fire which damages the missile fire control system while in port at Naples, Italy.

5 Maggio 1978- Setif, Algeria: fonte radiografica compromessa A 25-curie iridium-192 source for industrial radiography was lost when it fell off a truck during transport. Two children, ages 3 and 7, found it and kept it for several days before giving it to their grandmother. She kept it in the kitchen of her house, additionally exposing four other family members. Radiation exposure was only identified by medical personnel 38 days after initial exposure. The grandmother died of radiation injuries including radiation burns and aplasia 53 days later. The two children received whole body doses of 100-140 rem, and localized doses required amputation of fingers and skin grafts. The four women, ages 14-20, developed radiation injuries; one woman suffered a miscarriage, and one developed thyroid cancer in 1994 and later breast cancer. All six survivors were alive in 2000.

14 Maggio 1978 - (incidente unità navale nucleare) Pacific: While surfacing in the western Pacific the USS Darter (SS-576) suffers flooding when about 45,000 pounds of sea water enter the engine room after a snorkel head valve fails. The USS Schofield (FFG-3) escorts the submarine toward Yokosuka, Japan. It arrives 19 May for repairs.

22 Maggio 1978 - Puget Sound, Washington, USA. A bordo del sommergibile nucleare USS Puffer, viene aperta una valvola per errore, rilasciando 1.900 litri di acqua radioattiva.

23 Maggio 1978 - (incidente unità navale nucleare) Pacific: While workers are draining a piping system aboard the USS Puffer (SSN-652), radioactive water spills on the drydock surface at the Puget Sound Naval Shipyard, Bremerton, Washington. A Navy spokesman says that "less than 5 gallons" of slightly radioactive water spilled as the workers were draining the liquid into two five-gallon plastic containers, a routine operation. The spill, says the Navy, was due to the inattention of the personnel doing the draining. The water being drained reportedly was part of the submarine's secondary cooling system. The drydock drain was contaminated, but was closed before any spillage escaped into the sea. According to the Navy, no workers were contaminated. Shipyard employees disputed the Navy's account, saying that the spill was much bigger, about 100 gallons; that response to the spill was slow; and that several workers suffered skin contamination. These reports could not be verified. Subsequently a contaminated 15-by 20-foot section of drydock is jackhammered up, sealed in drums and shipped to a nuclear waste site in Hanford, Washington.

26 Maggio 1978 - (incidente unità navale nucleare) Pacific: About two cups of radioactive water leak from a pipe fitting aboard the USS Aspro (SSN-648) while the submarine is in the Puget Sound Naval Shipyard, Washington, when a worker fails to shut a valve tightly. According to the Navy, no personnel suffered skin exposure, but the worker detected a small spot of radioactivity on his pants, which was removed and disposed of as radioactive waste. No radioactivity escaped to the outside environment.

31 Maggio 1978 - (incidente unità navale nucleare) Pacific: The USS Midway (CV-41) suffers a fire which originates in the exhaust ventilation system, quickly spreads through the 3A boiler uptakes on the second deck, and terminates in the main uptake space, while it is docked in Yokosuka, Japan. The cause of the fire is later thought to be welding in a vent system containing a fine oil mist which ignited and spread.

16 Giugno 1978 - (incidente unità navale nucleare) Atlantic: The propeller shaft of the USS Tullibee (SSN-597) snaps just outside the hull causing limited engine room flooding and loss of propulsion while it is submerged in the Mediterranean. The flooding is stopped by tightening the emergency packing on the propeller shaft. The submarine quickly surfaces and is assisted by other U.S. naval vessels. Subsequently it is towed to Rota, Spain, for repairs.

19 Luglio 1978 - (incidente unità navale nucleare) Atlantic: A helicopter crashes after striking the Royal Navy destroyer HMS Devonshire while executing a fly by of the ship during an air display off the U.K.

25 Luglio 1978 - (incidente unità navale nucleare) Atlantic: The USS Opportune (ARS-41) is struck by a dummy training round fired from a U.S. destroyer south of Guantanamo Bay, Cuba, while towing a target sled during gunnery exercises.

25 Luglio 1978 - La Maddalena, Italia. Il "Corriere della sera", in un articolo firmato da Gianfranco Ballardini, rivela che i dati della radioattività nell'arcipelago maddalenino, nei mesi da luglio ad ottobre 1977, hanno registrato un brusco aumento. Nelle acque di La Maddalena sarebbero state trovate tracce anche di cobalto 58 e di cobalto 60, come di radio-nichel, di radio-zinco e di radio-ferro.

5 Agosto 1978 - La Maddalena, Italia. Secondo il Presidente del CNEN il brusco aumento di radioattività nelle acque dell'arcipelago maddalenino, per quel periodo oggetto delle rivelazioni

riportate dal "Corriere della sera" (25 luglio 1978), sarebbe stato riscontrato anche in altre località e sarebbe attribuibile alle ricadute delle esplosioni nucleari in atmosfera effettuate dalla Cina

19 Agosto 1978 - (incidente unità navale nucleare) Atlantic: A Soviet Echo II class nuclear-powered cruise missile submarine is sighted dead in the water near Rockall Bank 140 miles north west of Scotland after experiencing problems with her nuclear power plant. On 20 August a U.S. P-3 Orion aircraft observes the submarine under tow to the Soviet Union south of the Faroe Islands. The exact cause of the problem and the number of possible personnel casualties is unknown.

21 Agosto 1978 - (incidente unità navale nucleare) Atlantic: While operating in the Mediterranean, the crew of the USS Forrestal (CV-59) is called to general quarters about noon due to widespread smoke reported on the third deck amidships. Shortly afterwards, burning boxes are discovered in a fourth deck store room. The fire is put out within ten minutes of the initial alarm.

27 Settembre 1978 - (incidente unità navale nucleare) Atlantic: The USS Detector (MSO-429) suffers a fire in the main engine room ten miles south of New London, Connecticut, and is towed to Newport, Rhode Island.

28 Settembre 1978 - (incidente unità navale nucleare) Pacific: The USS General H.H. Arnold (T-AGM-9) is a drift for several hours about 300 nautical miles north west of Adak, Alaska, in the Bering Sea after failure of the main reduction gear bearing.

29 Settembre 1978 - (incidente unità navale nucleare) Atlantic: The USS Fairfax County (LST-1193) suffers extensive damage to its Number 3 engine room and second division berthing compartment in a major fire while en route to Naples, Italy. Two crewmembers are injured and the ship is placed in tow.

19 Ottobre 1978 - (incidente unità navale nucleare) Atlantic: The commander of the Royal Navy diesel submarine HMS Oracle is reprimanded for allowing his ship to touch bottom during trials in the narrow Loch Fyne, Strathclyde, Scotland. The bump dented four torpedo tubes, but the hull remained intact and the submarine rose safely to the surface. The submarine was running deeper than usual to avoid a yacht on the surface, but failed to monitor how close it was to the bottom.

31 Ottobre 1978 - (incidente unità navale nucleare) : The Royal Navy frigate HMS Minerva suffers an explosion.

1 Novembre 1978 - (incidente unità navale nucleare) Atlantic: In November the Royal Navy fleet auxiliary HMS Hebe suffers a fire started by a crewman while at the Gibraltar naval base.

2 Novembre 1978 - (incidente unità navale nucleare) Atlantic: The Greek trawler Ayos Nikolaos sinks after colliding with a Turkish gunboat in the Mediterranean, killing one.

20 Novembre 1978 - (incidente unità navale nucleare) Pacific: The USS Coral Sea (CV-43) suffers a fire of unknown origin while moored at Puget Sound Naval Shipyard, Washington, which causes damage to the medical and dental spaces.

21 Novembre 1978 - (incidente unità navale nucleare) Atlantic: The USS Saratoga (CV-60) and the USS Waccamaw (T-AO-109) collide during refueling operations 50 miles south of Crete, with only minor damage and no injuries.

4 Dicembre 1978 - (incidente unità navale nucleare) Atlantic: The Royal Navy diesel submarine HMS Olympus dives too slowly and is struck by an unknown merchant ship in the Portland, U.K., exercise area.

6 Dicembre 1978 - (incidente unità navale nucleare) Pacific: The USS Ranger (CV-61) experiences an explosion and flash fire during fleet exercises off Baja California which result in minor burns to nine crewmen.

13 Dicembre 1978 - (incidente unità navale nucleare) : The Royal Navy helicopter carrier HMS Hermes is damaged by fire in a mess deck. Damage is not severe.

13 Dicembre 1978 - Siberian Chemical Combine, Russia: criticità di incidente con soluzione di plutonio The accident occurred in a facility which processed plutonium metal ingots. Ingots were placed in stainless steel cans within a glovebox. In violation of procedures, one operator asked a second operator to assist him in transferring ingots amongst containers to speed the process. The second operator, unattended, erroneously transferred two ingots to the same container. The first operator returned and transferred two more ingots to this same container, for a total plutonium mass of 10.68 kg. While transferring the fourth ingot, a criticality excursion occurred, producing an energy release that either expelled the fourth ingot or prompted the operator to instinctively withdraw it, ending the excursion. The operator saw a flash of light and felt an instantaneous heating of his hands and arms. The operator received a whole body dose of 250 rads, with a localized dose to his hands of over 2000 rads. Seven other glovebox operators received doses of 5 to 60 rads.

1979 - Stati Uniti: un impiegato tenta una estorsione per denaro mettendo un campione di Biossido di Uranio in una lettera al presidente della GE e minacciando di disperderne un intero contenitore su una città USA

1979 – Francia. Bombe di ecoterroristi danneggiano seriamente una fabbrica di equipaggiamenti nucleari.

1979 – Spagna. Bomba dell'ETA nella camera di una turbina. Un morto

1979 – Spagna. L'ETA provoca diverse migliaia di dollari di danno in una fabbrica di equipaggiamenti nucleari

1979 - France: Environmental terrorists cause \$20 million in damages at a nuclear plant

1979 - Virginia: 2 plant operator trainees entered fuel storage building at Surry NPS and damaged four new fuel assemblies by pouring sodium hydroxide on them

1979 - Parana, Argentina: incidente radiografico An auxiliary nurse was exposed to x-rays from a diagnostic fluoroscope unit due to faulty wiring, causing emission of x-rays while the unit was open. The individual received a whole-body dose of 94 rad, resulting in slight depression of bone marrow.

1979 - Montpellier, Francia: incidente da irradiazione An accidental exposure to an iridium-192 radiography source caused significant whole-body and localized exposure to one worker, who had to have his left arm amputated.

Gennaio 1979 - North Carolina: An employee of a GE subcontractor sent extortion letter with sample of uranium dioxide to general manager of GE nuclear facility in Wilmington. Individual had stolen two 5-gallon containers of uranium dioxide and threatened to disperse them in unnamed U.S. city unless he received \$100,000 ransom. He was arrested and sentenced to 15 years

17 Gennaio 1979 - (incidente unità navale nucleare) Atlantic: A mechanic who helped to contain a steam burst after an explosion in the engine room aboard the Royal Navy nuclear-powered ballistic missile submarine HMS Revenge wins the Queen's Gallantry Medal. He crawled along a foot-wide catwalk below a hot cloud of escaping high-pressure steam as he searched for the leak in the turbo-generator room.

22 Gennaio 1979 - (incidente unità navale nucleare) Atlantic: The USS Aylwin (FF-1081) suffers a disabling casualty and is towed to Charleston, South Carolina, by the USS Petrel (ASR-14).

1 Febbraio 1979 - (incidente unità navale nucleare) Atlantic: In February a fire breaks out in the forward boiler room of the USS Manley (DD-940) during preparation to get underway from Mayport, Florida. Twelve men are injured, one later dies and the cost is put at \$75 million.

9 Febbraio 1979 - (incidente unità navale nucleare) Pacific: The USS Davidson (FF-1045) loses power after a brief fire puts out a boiler in the Philippine Sea. The frigate is towed to Subic Bay where it arrives five day later.

1 Marzo 1979 - (incidente unità navale nucleare) Atlantic: The French diesel submarine Marsouin is caught in the nets of the French trawler St. Blaise off Brittany. Neither vessel is damaged.

4 Marzo 1979 - (incidente unità navale nucleare) Atlantic: The USS Francis Marion (LPA-249) is holed above the waterline and receives structural damage when it is struck by the Greekbulk carrier Starlight near the entrance to Chesapeake Bay off Cape Henry, Virginia.

7 Marzo 1979 - (incidente unità navale nucleare) Atlantic: The USS Alexander Hamilton (SSBN-617) becomes tangled in the nets of a Scottish fishing trawler in the sound of Jura off the west coast of Scotland. The Hamilton tows the trawler backward for about 45 minutes until the nets are cut. No injuries or serious damage result.

14 Marzo 1979 - (incidente unità navale nucleare) Atlantic: The USS Wainwright (CG-28) runs aground for six hours in Charleston harbor, South Carolina, near the Mount Pleasant Range.

28 Marzo 1979 - Middletown, Pennsylvania, USA: parziale meltdown. Equipment failures and worker mistakes contributed to a loss of coolant and a partial core meltdown at the Three Mile Island nuclear reactor 15 km (9 miles) southeast of Harrisburg. While the reactor was extensively damaged on-site radiation exposure was under 100 millirems (less than annual exposure due to natural sources), with exposure of 1 millirem (10 μ Sv) to approximately 2 million people. There were no fatalities. Follow up radiological studies predict at most one long-term cancer fatality.

28 Marzo 1979 - Three Mile Island (Harrisburgh, Usa) (scala Ines 5). Il surriscaldamento di un reattore, a seguito della rottura di una pompa nell'impianto di raffreddamento, provoca la parziale fusione del nucleo rilasciando nell'atmosfera gas radioattivi pari a 15mila terabequerel (TBq). Vengono evacuate 3.500 persone.

28 Marzo 1979 - (incidente unità navale nucleare) Atlantic: The USS Independence (CV-62) experiences a brief control room fire in the Roosevelt Roads area off Puerto Rico. Thirty people suffer from minor smoke inhalation.

29 Marzo 1979 - (incidente unità navale nucleare) Pacific: The USS Ranger (CV-61) suffers a main engine turbine casualty requiring extensive repair while training in the Subic Bay operations area off the Philippines.

4 Aprile 1979 - (incidente unità navale nucleare) Pacific: The USS Ranger (CV-61) sustains substantial damage in a collision with the Liberian tanker Fortune near the eastern approaches to the Strait of Malacca. There are no injuries and the Ranger heads toward Subic Bay while the tanker, holed in the port side from the main deck to the waterline, is towed to Singapore. On 20 April the Ranger voyages to Yokosuka, Japan, after completing interim repairs to her bow.

9 Aprile 1979 - (incidente unità navale nucleare) Atlantic: Five fires set by an arsonist aboard the USS John F. Kennedy (CV-67) kill one shipyard worker and injure 34 other people while the carrier undergoes overhaul at Norfolk Naval Shipyard, Virginia.

27 Aprile 1979 - (incidente unità navale nucleare) Atlantic: The USS Pargo (SSN-650) is briefly grounded while entering New London, Connecticut, harbor in heavy fog.

9 Maggio 1979 - (incidente unità navale nucleare) Atlantic: The USS Savannah (AOR-4) collides with the USS Forrestal (CV-59) after suffering a gyro casualty while servicing the Forrestal in the Caribbean. Both ships suffer minor damage with no personnel casualties.

11 Maggio 1979 - (incidente unità navale nucleare) Atlantic: Primary coolant water leaks from one of the two nuclear reactors aboard the USS Nimitz (CVN-68). A Navy spokesman says there was no release of radioactivity, no danger to the core, and no danger to the ship's crew. The ship was operating off the Virginia coast.

11 Maggio 1979 - La Hague, Francia: assalto radiologico An individual placed radioactive graphite fuel element plugs under the driver's seat of a car. The victim sustained a 25-30 rad dose to his spinal bone marrow and 400-500 rads to his testes. The perpetrator, who was trying to kill his employer, was tried and convicted of poisoning by radiation, fined \$1,000, and served 9 months in prison.

14 Maggio 1979 - (incidente unità navale nucleare) Pacific: The USS Cook (FF-1083) and the USS Mars (AFS-1) collide off Point Loma near San Diego, California, injuring seven.

24 Maggio 1979 - (incidente unità navale nucleare) Atlantic: The USS Andrew Jackson (SSBN-619) incurs slight damage to its rudder when it runs aground briefly while entering the New London, Connecticut, harbor in reduced visibility.

26 Maggio 1979 - (incidente unità navale nucleare) Pacific: The USS Gray's (FF-1054) living barge receives structural damage of over \$1,000,000 in a fire caused by arson while the ship is berthed at Todd Pacific Shipyard, Seattle, Washington.

4 Giugno 1979 - (incidente unità navale nucleare) Atlantic: The USS Woodrow Wilson (SSBN-624) runs aground in heavy fog at Race Rock while en route to New London, Connecticut. The submarine backs off and proceeds to port for inspection and damage assessment.

4 Giugno 1979 - (incidente unità navale nucleare) Atlantic: The USS George Washington Carver (SSBN-656) snags the nets of a Spanish fishing vessel and drags the boat through the water off Rota, Spain.

5 Giugno 1979 - (incidente unità navale nucleare) Atlantic: Two fires break out aboard the USS John F. Kennedy (CV-67) at the Norfolk Naval Shipyard, Virginia, but cause no injuries or significant damage.

5 Giugno 1979 - Los Angeles, California, USA: fonte compromessa A radiographer was worker at a temporary job site with a 28-curie iridium-192 industrial radiography source. When leaving the site, he failed to secure the camera and source. The source fell out of the camera and was picked up by a worker who did not know it was radioactive. This worker placed it in a hip pants pocket for 45 minutes before giving it to a plant manager. He incurred a 1.5 megarem surface dose (60,000 rem at 1 cm depth), requiring skin grafts to the buttocks, and a whole body dose of order 68 rem. Four other workers suffered localized radiation injuries to the hands, and 11 individuals were exposed altogether.

12 Giugno 1979 - (incidente unità navale nucleare) Atlantic: A Mk 48 conventional torpedo jams between loading equipment and a bulkhead when a chain breaks on the loading mechanism allowing the torpedo to drop several feet aboard the USS Memphis (SSN-691) docked at the Norfolk Naval Station, Virginia. The torpedo is removed two days later. It did not have a triggering device, but Navy sources say had it exploded it easily could have sunk the submarine.

13 Giugno 1979 - Spain: Two ETA guerrillas planted bomb in turbine room of Lemoniz NPS which was later detonated 25 minutes after a warning call. One worker who did not evacuate was killed; a tank containing 5,000 liters of oil was ignited and turbine components were moderately damaged. The ETA claimed responsibility on 16 June

20 Giugno 1979 - (incidente unità navale nucleare) Pacific: The USS Hawkbill (SSN-666) reactor's primary coolant system develops a leak while the submarine is on maneuvers in Hawaiian waters which lasts for four days. Originally the leak is about two gallons an hour, but by the time the submarine docks at Pearl Harbor, Hawaii, on 23 June, the leak has been reduced to three-quarters an hour. On 24 June it is stopped. The Navy says none of the water escaped, as it was captured and stored in tanks designed for such contingencies and that none of the crew was in danger. Supplemental coolant water was pumped in to prevent overheating. According to the Navy, "The leakage was caused by normal wear of inside parts of valves. Such leakshappen occasionally."

21 Giugno 1979 - (incidente unità navale nucleare) Pacific: The USS Enterprise (CVN-65), under overhaul at the Puget Sound Naval Shipyard, sustains a two-hour Class Alpha fire in a catapult room, machine shop, and passage way.

26 Giugno 1979 - (incidente unità navale nucleare) Atlantic: The USS Forrestal (CV-59) suffers three minor fires while in Mayport, Florida. Arson is suspected.

29 Giugno 1979 - (incidente unità navale nucleare) Atlantic: A steward is sentenced for setting fires aboard the Royal Navy frigate HMS Sirius while docked at Devonport, U.K.

3 Luglio 1979 - (incidente unità navale nucleare) Atlantic: While at Norfolk Naval Shipyard, a fire sweeps through two berthing spaces aboard the USS Iwo Jima (LPH-2), injuring five. A sailor is arrested on arson charges on 6 July.

3 Luglio 1979 - (incidente unità navale nucleare) Atlantic: The Royal Navy diesel submarine HMS Onyx is freed from the fishing nets of a stationary trawler off Holy Island in the Firth of Clyde, Scotland.

6 Luglio 1979 - (incidente unità navale nucleare) Atlantic: The USS Lexington (AVT-16) suffers a Class Alpha fire off Pensacola, Florida, and is dead in the water for over an hour when all boilers are shut down as a result.

12 Luglio 1979 - (incidente unità navale nucleare) Pacific: The USS Sealift China Sea (T-AO-170) loses power over 150 nautical miles off Subic Bay, Philippines, as a result of an engine casualty. The USS Beaufort (ATS-2) is directed to rendez vous and render assistance.

13 Luglio 1979 - (incidente unità navale nucleare) : The USS Conyngham (DDG-17) suffers two minor fires on consecutive days in the First Division Berthing Compartment and the Anchor Windlass Room. An investigation leads to the arrest of an arsonist on 14 July, the day of the second fire.

16 Luglio 1979 - Church Rock, Nuovo Messico, USA. Le pareti di un bacino di scorie radioattive si rompono, lasciando fuoriuscire una grande quantità di scorie.

2 Agosto 1979 - (incidente unità navale nucleare) Atlantic: The USS Comte de Grasse (DD-974) incurs extensive smoke damage in a three-hour engine room fire while berthed at Norfolk, Virginia.

7 Agosto 1979 – Erwin, Tennessee (USA). La fuoriuscita di uranio arricchito da una installazione nucleare segreta provoca la contaminazione di oltre 1.000 persone. Vengono registrati nella popolazione valori di radioattività fino a cinque volte superiori alla norma.

9 Agosto 1979 - (incidente unità navale nucleare) Pacific: A fire, caused by a broken acetylene line, breaks out aboard the USS Midway (CV-41) while berthed at Yokosuka, Japan, killing one worker and injuring 17 sailors.

2 Settembre 1979 - (incidente unità navale nucleare) Pacific: The USS Truxtun (CGN-35) spills some 13 gallons of radioactive "high-purity water" into San Diego Bay, California. A U.S. Navy spokesman says the spill contained a small amount of radioactivity which was too small to have an impact on the environment. Initial reports had said the ship spilled as much as 80 to 100 gallons of radioactive water.

19 Settembre 1979 - (incidente unità navale nucleare) Atlantic: The Dutch diesel submarine Tonijn experiences a fire in the port engine room and loses power while en route for Naples, Italy. The USS Harlan County (LST-1196) leaves Cartagena, Spain, to provide towing assistance to Gibraltar.

22 Settembre 1979 - Oceano Indiano. Senza preavviso, al largo di Capo Buona Speranza ha luogo un'esplosione nucleare. Persone bene informate pensano che sia stato un test israeliano con l'assistenza del SudAfrica.

29 Settembre 1979 - Tucson, Arizona, USA. Il governatore Bruce Babbitt ordina alla Guardia Nazionale di "pulire" la fabbrica American Atomics, che, secondo lui, aveva delle fughe. Nella cucina della scuola pubblica situata di fronte, 300.000 dollari di cibo erano stati contaminati da Tritio radioattivo; i dolci al cioccolato avevano 56 nCi per litro, due volte e mezzo il limite di sicurezza.

6 Novembre 1979 - (incidente unità navale nucleare) Atlantic: Two part-time officers are reprimanded after the Royal Navy coastal minesweeper HMS Alfriston runs aground.

9 Novembre 1979 - USA. L'attacco simulato di un missile americano mette in moto accidentalmente un sistema di prevenzione che imbroglia gli operatori. Nei 6 minuti necessari ad accorgersi dell'errore, erano già in fase di decollo i caccia dalle basi americane e canadesi.

11 Novembre 1979 - Spain: 5 ETA guerrillas entered Equipos Nucleares (Nuclear Instruments) factory in Maliano, planted explosives and kidnapped the 10 guards on duty; guards were released near Santander-Vizcaya border. Charges exploded after midnight, causing \$6,000,000 in damage mostly to one end of main factory building. ETA claimed responsibility on 13 November

16 Dicembre 1979 - (incidente unità navale nucleare) Atlantic: Storm-force winds over southern England cause a giant crane at the Royal Navy Devonport dockyard to collapse. Thousands of pounds sterling damage to the Royal Navy frigates HMS Minerva and HMS Ambuscade result.

Prima del 1980 -France: Radioactive graphite fuel element plugs placed under driver's seat of a car; victim sustained 25-30 rad dose to his spinal bone marrow and 400-500 rads to his testes. Perpetrator was tried and convicted of poisoning by radiation, fined \$1,000, and served 9 months in prison

1980 - Francia: un elemento di combustibile viene collocato sotto la sedia di un'auto. La vittima riceve 25-30 rad al midollo spinale e 400-500 rads ai testicoli

1980 - Garigliano (Caserta - Italia). Ennesimo incidente nella centrale del Garigliano dovuto alle infiltrazioni di acqua di falda nei sotterranei della centrale dove c'erano i contenitori di stoccaggio delle resine provenienti dal sistema di purificazione delle acque del reattore della centrale. L'incidente provoca la fuoriuscita di ingenti quantità di materiale radioattivo (in particolare Cesio 137, Cesio 134 e Cobalto 60). Qualche giorno dopo l'incidente si registra la morte di 25 bufale che avevano pascolato in aree sommerse dal fiume e la moria di grossi pesci lungo il tratto di mare ove sfocia il fiume Garigliano.

1980 - Shanghai, Cina: incidente da irradiazione An accident occurred at an irradiation facility using a cobalt-60 source. The irradiation room had defective entry interlocks and an individual entered the room during a power failure, acquiring a 500-rad dose. The person also suffered localized exposure injury.

1980 - Texas, USA: incidente radioterapico An accident involving yttrium-90 in nuclear medicine therapy caused 7 deaths.

3 Gennaio 1980 - (incidente unità navale nucleare) Atlantic: The Malaysian oil tanker Santo Prestige loses power and collides with the USS Milwaukee (AOR-2) moored at portside in Norfolk, Virginia. The collision results in a 40- by 15-foot gash in the hull of the Milwaukee.

4 Gennaio 1980 - (incidente unità navale nucleare) Pacific: The USS Pecos (AO-65) collides with the moored USS Bradley (FF-1041) at Terminal Island, Los Angeles, California, injuring one, and causing minor damage to the Bradley and a two-foot hole in the Pecos.

16 Gennaio 1980 - (incidente unità navale nucleare) Pacific: The USS Okinawa (LPH-3) is placed in tow when it suffers an engineering casualty. The casualty is corrected on 18 January.

5 Febbraio 1980 - (incidente unità navale nucleare) Atlantic: The USS Inchon (LPH-12) collides with the USS Spiegel Grove (LSD-32) while refueling in the Atlantic while en route to the Mediterranean Sea, with reportedly no injuries and only minor damage.

3 Marzo 1980 - (incidente unità navale nucleare) Indian: The USS William H. Standley (CG-32) sustains a ruptured tube casualty to the Number 1B boiler during exercises off the Strait of Hormuz and proceeds to the U.S. Navy Facility at Diego Garcia.

13 Marzo 1980 - Loir-et-Cher, centrale nucleare di Saint-Laurent, Francia. Un incidente porta alla fusione di due elementi combustibili del reattore A2, filiera UNGG (uranio nucleare, grafite, gas), potenza 515 MWe. La placca metallica di contegno dei sensori del reattore, in seguito a fenomeni di corrosione, ostruisce una dozzina di canali di blocco della grafite, impedendo così un buon raffreddamento del nocciolo e provocando la fusione di due elementi combustibili. Gravemente danneggiato, il reattore resta indisponibile per circa due anni e mezzo. E' il più grave incidente riferito ad un reattore francese (livello 4 scala INES)

18 Aprile 1980 - (incidente unità navale nucleare) Atlantic: A Soviet Mirka class frigate collides with the Danish minesweeper Fyen in the Baltic Sea during Warsaw Pact exercises. The Danish Ministry of Foreign Affairs protests the incident, but receives no formal reply.

5 Maggio 1980 - (incidente unità navale nucleare) Atlantic: Two West German Navy ships collide in the Mediterranean off Toulon, France; no injuries.

13 Maggio 1980 - (incidente unità navale nucleare) Atlantic: The Royal Navy diesel submarine HMS Onyx runs aground in Portsmouth harbor, U.K. It takes a tug 20 minutes to pull the ship free.

3 e 6 Giugno 1980 - Località sconosciuta, USA. Un allarme indicante un massiccio attacco missilistico sovietico viene registrato da un computer per le comunicazioni connesso al NORAD. Dopo una rapida consultazione per la valutazione della minaccia, 100 B-52 armati nuclearmente vengono messi in allerta per decollo imminente. L'errore viene individuato, ma lo stesso computer lancia un identico allarme tre giorni dopo il 6 giugno 1980. Viene nuovamente radunata una consultazione per valutare la minaccia e 100 B-52 armati nuclearmente vengono messi in allerta per il decollo. Il problema viene successivamente individuato in un difetto di un circuito integrato del computer, che produceva a caso cifre che rappresentavano il numero dei missili individuati.

4 Giugno 1980 - (incidente unità navale nucleare) Atlantic: A lieutenant on the Royal Navy frigate HMS Nubian is reprimanded for negligence following a collision with a Dutch ship.

24 Giugno 1980 - Nevada Test Site (USA): test nucleare (Huron King). Il test sotterraneo nucleare Huron King fu patrocinato dal DOD (Department of Defense). Il test coinvolse un dispositivo di circa 20 Kilotoni e testò gli effetti dell'impulso elettromagnetico generato (SGEMP) su un satellite di comunicazione militare funzionante in larga scala DSCS-3. Il dispositivo spaziale venne contenuto in un grande carro corazzato.

26 Giugno 1980 - (incidente unità navale nucleare) Indian: The USS Constellation (CV-64) collides with a Bangladesh merchant ship in the Arabian Sea. The U.S. Navy says there was minor damage to both ships.

8 Luglio 1980 - (incidente unità navale nucleare) Atlantic: The small Danish Home Guard cutter MHV 94 is rammed by the East German minesweeper Komet nine miles south of Gedser, Denmark,

in the Baltic Sea. The collision causes severe damage to the front of the cutter. Denmark protests to East Germany over incident.

20 Luglio 1980 - (incidente unità navale nucleare) Pacific: The USS Gurnard (SSN-662) spills 30 gallons of water containing radioactive material into San Diego Bay, California. A Navyspokesman says the leak occurred when a crewman of the Gurnard accidentally opened a valve allowing the water to escape. The spokesman said a water sample was taken and there was no increase in the general background radioactive level in the area where the spill happened.

26 Luglio 1980 - (incidente unità navale nucleare) Atlantic: The Royal Navy patrol boat HMS Sabre crashes at Alderney, Channel Islands, in the English Channel.

29 Luglio 1980 - (incidente unità navale nucleare) Pacific: The USS Midway (CV-41) collides with the Panamanian merchantship Cactus while transiting the passage between Palawan Island of the Philippines and the coast of Northern Borneo 450 nautical miles south west of Subic Bay en route to Singapore. The Midway, the U.S. Navy says, sustained no serious damage although two U.S. sailors were killed, three were injured, and three F-4 Phantom aircraft parked on the flight deck were damaged.

12 Agosto 1980 - (incidente unità navale nucleare) Atlantic: The Royal Navy nuclear-powered attack submarine HMS Sovereign breaks down during routine tests in Plymouth Sound, U.K. According to the Royal Navy the breakdown was caused by a "minor mechanical defect." The submarine was towed back to Devonport, U.K.

21 Agosto 1980 - (incidente unità navale nucleare) Pacific: A Soviet Echo class nuclear-powered submarine suffers a serious casualty and loses power about 85 miles off the east coast of Okinawa. At least nine crewmembers are believed to have died from a probable fire in the propulsion spaces. A Soviet freighter arrives to evacuate the crew and a tug boat is readied to tow the submarine to Vladivostok escorted by several warships. The next day Japan advises ships to avoid the area, citing possible radiation leaks and refuses to allow the submarine to pass through Japanese territorial waters unless Moscow guarantees there are no nuclear weapons aboard and no danger of radiation leaks. The Soviets initially refuse to guarantee the safety of the reactor and enter Japanese waters despite Japan's warnings. But on 24 August, Moscow acquiesces to Japan's demands concerning safety, and informs Japan there was no radioactive leakage or nuclear weapons on board. Subsequently, Japanese examination of air and water in the area reportedly finds evidence of radioactive contamination. 23 Agosto 1980 - Giappone. Un sottomarino nucleare sovietico prende fuoco al largo del Giappone e trasmette per radio una richiesta di aiuto. Il bilancio dei giapponesi parla di 9 morti e 3 feriti. Restano molti misteri sulla dinamica dell'incidente

31 Agosto 1980 - (incidente unità navale nucleare) Atlantic: In late August some cracks in the USS Vulcan's (AR-5) outerhull which allow oil seepage are discovered. These are repaired while the ship is in Norfolk, Virginia, and afterward the ship sails for Norway.

9 Settembre 1980 - (incidente unità navale nucleare) Atlantic: The USS Valdez (FF-1096) suffers a material failure to the ship's sole gyro compass following a departure from Antwerp, Belgium. The ship operates on magnetic compass only for the next six weeks, through out exercise "Teamwork 80." This degrades the performance of weapons systems and satellite navigation, and makes refueling at sea more complicated.

15 Settembre 1980 - Grand Forks AFB, North Dakota. A B-52H bomber carrying nuclear-armed AGM-69 short range attack missiles caught fire while on the ground during an alert exercise. A strong wind and firefighters managed to keep the intense flames away from the missiles. The fire was caused by a fuel leak and burned intensely, fed by fuel from the Number Three main wing tank. The fire burned for more than three hours and was extinguished only after the fuel flow had ceased. Lawrence Livermore National Laboratory Director Roger Batzel later testified that if "the wind was blowing down the axis of the airplane, the whole aircraft [including its load of nuclear-armed missiles] would have been engulfed in flames."

19 Settembre 1980 - Damascus, Arkansas, USA. I vapori del combustibile provenienti da un missile balistico intercontinentale Titan II (ICBM "Intercontinental Ballistic Missile") fanno saltare in aria, nella base di lancio del missile, la porta da 740 tonnellate di calcestruzzo e acciaio e catapultare la testata del missile nucleare a circa 185 m. di distanza. L'incidente accade quando un addetto alle riparazioni dell'Air Force lascia cadere una pesante chiave inglese e questa colpisce il missile, causando una crepa nella cisterna di carburante pressurizzato del missile. Il carburante prende fuoco e esplose dopo 8 ore e mezza, uccidendo una persona e ferendone altre ventuno. Il veicolo di rientro del missile, che conteneva una testata nucleare, fu ritrovato intatto.

30 Settembre 1980 - Iraq. Un caccia F4 iraniano bombarda il centro di ricerca nucleare iracheno di Osirak

20 Ottobre 1980 - (incidente unità navale nucleare) Atlantic: The USS Saratoga (CV-60) suffers five minor fires from 20 to 26 October while undergoing a major overhaul at the Philadelphia Naval Shipyard, Pennsylvania. The Navy investigates the possibility of arson.

Dicembre 1980 - Colorado, USA. Un rimorchio del Dipartimento dell'Energia che trasporta plutonio da Richland, Washington, nel New Messico, si capovolge sulla strada ghiacciata dell'Interstatale 25 vicino Fort Collins, Colorado.

1 Dicembre 1980 - (incidente unità navale nucleare) Atlantic: In December, the Royal Navy nuclear-powered attack submarine HMS Dreadnought suffers serious machinery damage -- reportedly cracks in the secondary cooling system -- which necessitate a complete reactor shutdown. This damage and troubles with scheduling a refit lead to a decision to retire the aging submarine.

1 Dicembre 1980 - (incidente unità navale nucleare) Atlantic: In December the Royal Navy frigate HMS Amazon strikes a coral reef off Belize in the Caribbean.

3 Dicembre 1980 - (incidente unità navale nucleare) Pacific: During a test, about 150 gallons of low-level radioactive water leak from a faulty valve on the USS Hawkbill (SSN-666) undergoing overhaul at the Puget Sound Naval Shipyard, Washington. Five workers receive low-level radioactive contamination. A Navy spokesman says they received a dose of radiation "less than that typically received by a chest X-ray."

3 Dicembre 1980 - (incidente unità navale nucleare) Atlantic: The USS America (CV-66) and USS Caloosahatchee (AO-98) collide during an underway replenishment maneuver 250 miles east of Charleston, South Carolina, when the boiler loses rudder control. Despite an emergency break away, the America suffers minor damage to a catwalk, a storage compartment, and a flight deck safety net rail. But there are no injuries and both ships continue operations

1981 - Comiso, Italia. Il governo Spadolini accetta l'installazione a Comiso (Sicilia) di una batteria di missili nucleari Cruise come richiesto dal programma di riarmo del presidente americano Reagan.

1981 – Ohio, USA. Una valvola di acqua di raffreddamento viene chiusa intenzionalmente, impedendo il corretto funzionamento del sistema di raffreddamento di emergenza

1981 – Iraq. I jet di Israele attaccano la centrale atomica di OSIRAK, distruggendo gli impianti di arricchimento dell'uranio

1981 - New York, USA: fuel oil filter drains were closed on backup diesel power generators at Nine Mile Point Unit 1, apparently intentionally, preventing their startup

1981 – New York, USA. Un generatore diesel di una centrale nucleare viene intenzionalmente danneggiato, per impedirne il corretto funzionamento

1981 - Ohio: water valve was found shut, apparently intentionally, at Beaver Valley NPS, leaving high-pressure portion of emergency cooling system disabled

1981 - In mare, Gran Bretagna. A number of missile diaphragms compressed onto Polaris missiles. There was no damage to missiles or warheads.

1981 - Buenos Aires, Argentina: incidente da irradiazione An iridium-192 industrial source became detached and lodged in its delivery tube, resulting in radiation burns on the finger tips to two individuals.

1981 - La Hague, Francia. Incendio in un silo nella fabbrica di ritrattamento. Livello 3, scala INES

10 Gennaio 1981 - (incidente unità navale nucleare) Atlantic: The USS Biddle (CG-34) and USS Raleigh (LPD-1) are slightly damaged when the Biddle strikes the moored Raleigh while approaching a pier in Norfolk, Virginia.

23 Gennaio 1981 - (incidente unità navale nucleare) Atlantic: The USS Birmingham (SSN-695) suffers a failed sonar dome while operating in the Mediterranean and is ordered into Gibraltar for damage assessment. On 30 January the ship is in Gibraltar for repairs.

27 Gennaio 1981 - (incidente unità navale nucleare) Atlantic: The USS Guam (LPH-9) suffers a minor fire of suspicious origin in an unoccupied compartment while in Norfolk, Virginia.

28 Gennaio 1981 - (incidente unità navale nucleare) Atlantic: The USS Sylvania (AFS-2) and USS Kalamazoo (AOR-6) collide amidships during underway replenishment in the Virginia Capes area with no serious damage.

20 Febbraio 1981 - (incidente unità navale nucleare) Indian: The USS Downes (FF-1070) is under tow by the USS Narragansett (T-ATF-167) from Diego Garcia to Subic Bay, Philippines, for repairs following casualties to both boilers. On 22 February the Downes is able to bring one boiler back into operation and continues to Subic Bay on its own power in company with the Narragansett.

21 Febbraio 1981 - (incidente unità navale nucleare) Pacific: The USS Okinawa (LPH-3) experiences a brief fire during training off San Clemente Island, California, but the ship continues its scheduled operations.

Marzo 1981 -altre fonti riportano gennaio 1981 – Tsuruga (Giappone). 280 persone vengono contaminate a causa di una fuga di residui radioattivi nella centrale di Tsuruga, in Giappone. Un mese dopo le autorità comunicano che 45 operai sono stati esposti a radioattività nel corso delle operazioni per la riparazione della centrale.

9 Marzo 1981 - Mar della Cina. Il sottomarino nucleare Usa "George Washington" sperona nel Mar della Cina la nave da guerra giapponese "Nisso Maru" e la affonda

14 Marzo 1981 - (incidente unità navale nucleare) Atlantic: The naval reserve destroyer USS Cone (DD-866) is temporarily grounded while departing Charleston, South Carolina. After being freed by a tug the Cone returns to Charleston for hull damage assessment.

19 Marzo 1981 - (incidente unità navale nucleare) Atlantic: The USS Yellowstone (AD-41) and the USS Robert A. Owens(DD-827) collide off Florida, causing extensive damage but no casualties.

26 Marzo 1981 - (incidente unità navale nucleare) Pacific: The USS Guardfish (SSN-612) touches ground while in the San Pedro Channel on the way to San Diego, California. There were no personnel injuries and an on-board inspection revealed no hull or equipment damage.

2 Aprile 1981 - Saintes, Francia: incidente da irradiazione While a technician was changing the cobalt-60 source in a teletherapy machine, the source fell to the ground. The technician picked up the source, touching it for 11 seconds. The dose to the hands was over 10,000 rad, and both hands had to be amputated. A second operator had to have both hands amputated, and a third had three fingers amputated. Eight other individuals in the room received doses of 1 rad to 100 rad.

3 Aprile 1981 - (incidente unità navale nucleare) Pacific: A fire breaks out in the engine room of the USS Taluga (T-AO-62) while the ship is operating 80 miles west of San Diego, California. Two injured crew members are airlifted to San Diego by helicopter. The fire is extinguished and the Taluga proceeds to port.

4 Aprile 1981 - (incidente unità navale nucleare) Atlantic: Workers at Coastal Drydock in New York (formerly Brooklyn Navy Yard) inadvertently cause a fire on the USS Aylwin (FF-1081) while welding. The frigate's Combat Information Center is damaged.

9 Aprile 1981 - (incidente unità navale nucleare) Pacific: The USS George Washington (SSBN-598) collides with the 2,350-ton Japanese freighter Nissho Maru in the East China Sea about 110 miles south-south west of Sasebo, Japan. As it is surfacing, it runs into the underside of the freighter, damages its hull and causes it to sink in approximately 15 minutes, killing two Japanese crewmen (13 others are rescued). The submarine suffers minor damage to a small section of its sail. The accident sparks a political furor in Japan, straining U.S.-Japanese relations a month before a meeting between Prime Minister Zenko Suzuki and President Ronald Reagan. The United States is criticized because: it took over 24 hours to notify Japanese authorities; the submarine and a U.S. P-3 Orion aircraft overhead did not make a rescue attempt; and the submarine was operating so close to Japan, less than 20 miles outside the 12-mile limit. The U.S. Navy initially says the submarine surfaced but could not see any ship in distress due to fog and rain. On 11 April President Reagan and other U.S. officials express regret over the accident, make offers of compensation and reassure the Japanese there is no cause for worry about radioactive contamination, but refuse to say what the submarine was doing so close to Japan or whether it was armed with nuclear missiles. Over the next several months as the controversy continues, the U.S. Navy: accepts responsibility to preclude lengthy litigation; is criticized for its preliminary report which says the submarine and Orion

claimed not to have realized the freighter was sinking; and relieves and reprimands the commanding officer and officer of the deck of the submarine. On 31 August the Navy releases a final report which concludes the accident resulted from a highly coincidental set of circumstances, compounded by errors on the part of some members of the submarine crew.

13 Aprile 1981 - (incidente unità navale nucleare) Pacific: The USS William H. Bates (SSN-680) is reported to run into gillnets near the Hood Canal in Washington state.

27 Aprile 1981 - (incidente unità navale nucleare) Atlantic: The USS Manitowoc (LST-1180) and the USS Trenton (LPD-14) begin a five-day visit to Alexandria, Egypt. The USS Jack (SSN-605) also is in port. The Trenton and Jack suffer minor damage when the Jack, moored alongside, surges against the Trenton in a sea swell.

1 Maggio 1981 - (incidente unità navale nucleare) Atlantic: In May the Royal Navy destroyer HMS Glasgow collides with the Soviet cruiser Admiral Isakov in the Barents Sea. The Glasgow's captain reports the Soviet ship was maneuvering dangerously.

15 Maggio 1981 - (incidente unità navale nucleare) Atlantic: A hairline crack is discovered in the main cooling system of the Royal Navy nuclear-powered attack submarine HMS Valiant as it returns to Devonport, U.K., after developing a fault in its cooling system while operating off the Cornish coast. The crack does not affect the operation of the reactor and the vessel returns to Devonport under its own power. The Royal Navy denies claims that contaminated water was discharged into Plymouth Sound, saying "A very small quantity of water leaked out and this was drained off into a lead tank in a barge for treatment." The reactor is cooled down before the leak is plugged.

26 Maggio 1981 - (incidente unità navale nucleare) Atlantic: A Marine EA-6B Prowler aircraft crashes while landing on the USS Nimitz (CVN-68) operating 70 miles off Jacksonville, Florida, killing 14 and injuring 48. The aircraft reportedly applied power as it was landing and then suddenly drifted to the right, running into parked aircraft, causing ammunition to explode, and starting numerous fires that took at least one hour to put out. Three F-14 Tomcats are destroyed and 16 other aircraft are damaged, and, overall, approximately \$100 million in damage results. The Nimitz returns to Norfolk, Virginia, for several days of repairs. The crash sparks a five-month debate between Representative Joseph P. Addabbo (D-NY) Chairman of the House Defense Appropriations Subcommittee and the Navy over whether drug use on board the carrier may have contributed to the crash.

1 Giugno 1981 - (incidente unità navale nucleare) Atlantic: The USS Nitro (AE-23) is badly damaged by a fire in the main machinery room while en route to Athens, Greece, 60 miles north east of Souda Bay, Crete. It is taken under tow the next day by the USS Neosho (T-AO-143) for Souda Bay.

4 Giugno 1981 - (incidente unità navale nucleare) Atlantic: A Soviet Kondor class minesweeper suffered heavy damage when she was in a collision in international waters with a Danish naval oiler in the southern area of the Baltic Sea.

10 Giugno 1981 - (incidente unità navale nucleare) Atlantic: The USS Detroit (AOE-4) runs aground on a sandbar near Old Point Comfort, Hampton Roads, Virginia, as the ship is preparing to enter port at Norfolk. There are no injuries or apparent damage. The ship is refloated the next day after off-loading its fuel.

29 Giugno 1981 - (incidente unità navale nucleare) Atlantic: The USS Dahlgren (DDG-43) suffers a two-hour fire in the radiomen's store room while in the Caribbean. The damage is light and the ship proceeds to Guadeloupe.

10 Luglio 1981 - La Maddalena, Italia. Dopo quasi cinque anni ancora un caso di cranioschisi a La Maddalena. Rimane l'ipotesi della radioattività per la presenza dei sommergibili nucleari statunitensi nelle acque del golfo de La Maddalena

14 Luglio 1981 - (incidente unità navale nucleare) Atlantic: The USS Coontz (DDG-40) accidentally fires a Harpoon anti-ship missile with a high-explosive warhead during a maintenance test about 70 miles from St. Croix, U.S. Virgin Islands. The missile impacts and is lost at sea.

19 Luglio 1981 - (incidente unità navale nucleare) Atlantic: A U.S. Marine Corps Reserve CH-53 Sea Stallion helicopter crashes and burns while landing aboard the USS Guam (LPH-9) during training operations in the Atlantic 35 miles southeast of Moorehead City, North Carolina, killing four and injuring 11 other Marine and Navy personnel.

29 Luglio 1981 - Tulsa, Oklahoma, USA: intenzionale autoesposizione a fonte industriale radiografica An unemployed radiographer incurred a self-inflicted radiation injury from an iridium-192 industrial radiography source, resulting in death. The individual, Douglas Crofut, had stolen the source in Tulsa, Oklahoma.

6 Agosto 1981 - (incidente unità navale nucleare) Pacific: Wardroom 1 of the USS Ranger (CV-61) catches fire, causing extensive damage while the ship is moored at Naval Air Station North Island, San Diego, California. Reportedly "reconstruction was monumental" and "communication's problems extended into work-ups."

15 Agosto 1981 - (incidente unità navale nucleare) Atlantic: A fire on board the USS Independence (CV-62) while in overhaul at the Norfolk Naval Shipyard, Virginia, damages the air operations and carrier control approach spaces. There are no injuries.

27 Agosto 1981 - (incidente unità navale nucleare) Atlantic: The USS Dallas (SSN-700) damages the lower portion of its rudder when it runs aground while approaching the Atlantic Underwater Test and Evaluation Center site at Andros Island, Bahamas. The submarine works itself free after several hours and returns to New London, Connecticut, on the surface for repairs.

1 Settembre 1981 - (incidente unità navale nucleare) Atlantic: According to raw CIA intelligence reports, in September a Soviet nuclear submarine operating in the Baltic "underwent a series of strong and sudden physical shocks. An emergency was declared and ... crew members were sealed into the compartment in which they were standing duty. The submarine was no longer navigable following the shocks and was taken under tow. It was towed for a total of 36 hours but was actually only moved during darkness." The submarine was towed to Kaliningrad and "the sailors that had been sealed in the compartment were then flown to Riga and hospitalized." The CIA source reports all the sailors exhibited signs of terminal radiation sickness.

6 Settembre 1981 - (incidente unità navale nucleare) Indian: A landing A-7 II Corsair aircraft collides with a taxiing F-14 Tomcat fighter on the USS Kitty Hawk (CV-63) killing one crewman and injuring two others while the carrier is operating in the Indian Ocean. The A-7 is recovered and the F-14 crew ejects safely, but the F-14 rolls overboard.

17 Settembre 1981 - (incidente unità navale nucleare) Atlantic: A U.S. Marine Corps CH-53C Sea Stallion helicopter crashes while attempting to land on the USS Guadalcanal (LPH-7) during Sixth Fleet training exercises in the Mediterranean near Sardinia, Italy, killing all five crewmen.

20 Settembre 1981 - (incidente unità navale nucleare) Indian: The USS Conyngham (DDG-17) runs aground momentarily while making a slow approach to the Mauritian coast causing minor damage to the sonar.

20 Settembre 1981 - (incidente unità navale nucleare) Pacific: The Philippine Navy frigate Datu Kalantiaw is forced aground by 127 miles per hour winds from Typhoon Clara while on anchor near Calayan Island, 340 miles north of Manila, with only 18 of 97 crew surviving.

24 Settembre 1981 - (incidente unità navale nucleare) Atlantic: The USS Guadalcanal (LPH-7) and the USS Waccamaw (T-AO-109) collide during underway replenishment south of Sardinia, Italy, causing minor damage but no injuries.

25 Settembre 1981 - (incidente unità navale nucleare) Indian: An Israeli missile boat runs aground on a Saudi Arabian reef in the Gulf of Eilat after its electrical system goes bad, knocking out its navigational equipment. The Saudis permit the Israelis to rescue the boat; 12 days later it is removed.

30 Settembre 1981 - (incidente unità navale nucleare) Atlantic: The USS Pegasus (PHM-1) collides with the USS Newport (LST-1179) while making an approach to connect for towing north of Cuba, causing minor damage.

Ottobre 1981 - Svezia. Un sottomarino nucleare sovietico si arena in una zona militare segreta nelle acque territoriali svedesi

7 Ottobre 1981 - (incidente unità navale nucleare) Atlantic: The USS Inchon (LPH-12) suffers a boiler explosion while preparing to get underway from Norfolk, Virginia.

13 Ottobre 1981 - (incidente unità navale nucleare) Atlantic: The USS Waccamaw (T-AO-109) collides with the USS Raleigh (LPD-1) while the USS Detroit (AOE-4) is alongside. The ships are underway in the Mediterranean.

17 Ottobre 1981 - (incidente unità navale nucleare) Atlantic: The USS Waccamaw (T-AO-109) is struck by an Italian tug in Cagliari, Sardinia, Italy, when the tug loses control while making an approach to aid in maneuvering. The boiler is holed but no pollution results.

21 Ottobre 1981 - (incidente unità navale nucleare) Indian: The USS Cook (FF-1083) observes a Soviet Foxtrot class diesel-powered attack submarine under tow while conducting intelligence operations off Socotra Island in the Indian Ocean.

27 Ottobre 1981 - (incidente unità navale nucleare) Atlantic: A Soviet Whiskey class diesel-powered attack submarine runs aground 10 kilometers from the Swedish naval base of Karlskrona, 300 miles south of Stockholm. The Swedish government alleges the submarine was engaged in illegal reconnaissance or mine-laying work and there was good reason to believe the vessel is carrying nuclear weapons. The Swedes demand an apology and an explanation. When the submarine captain is questioned he contends bad weather and a faulty compass led to the inadvertent intrusion into Swedish waters. But the Swedish authorities maintain that good navigation was necessary for the vessel to come this far into their waters. On 29 October a Soviet

tug is turned back by Swedish warships and another unidentified submarine is spotted within Swedish waters and is pursued by Swedish antisubmarine warfare helicopters until it disappears. On 2 November the submarine is refloated by Swedish tugs to prevent heavy seas from battering the ship. On 5 November the Swedish government announces that the submarine probably has nuclear weapons aboard. Foreign Minister Ullsten says "it must be very embarrassing" to have this information released when the Soviets "have created the impression that they are more in favor than the United States" of arms control. On 6 November the submarine is returned to the Soviets. The same day the Swedish government expresses the view that previous Soviet proposals in regard to the Baltic as a "sea of peace" were no longer credible. Officials said the incident would affect Swedish attitudes toward Nordic nuclear-free-zone proposals from the Soviet Union. It is later reported on 6 May 1982 that the Soviet government had agreed to pay Swedish costs of \$212,000 arising from the incident.

2 Novembre 1981 - (incidente unità navale nucleare) Atlantic: At the Holy Loch naval base in Scotland a Poseidon submarine-launched ballistic missile is dropped 13 to 15 feet as it is moved aboard the submarine tender USS Holland (AS-32) after an error by the crane operator. The fall is arrested by a safety device, but critics suggest there was a serious chance that a conventional explosion could have taken place, dispersing radioactive material. This explosion could have occurred because the Poseidon warhead uses an unstable conventional high explosive called LX-09. Moreover, the Navy is upbraided for not immediately reporting the incident or notifying surrounding communities of possible danger. The U.S. Navy refuses to confirm or deny whether there were nuclear weapons on the missile and states "there was no damage done, no injuries occurred; there was no danger to personnel."

3 Dicembre 1981 - (incidente unità navale nucleare) Atlantic: An arresting wire breaks during the landing of an A-7 Corsair aircraft on the USS John F. Kennedy (CV-67) while operating in the Caribbean Sea, killing two men and injuring three. Four aircraft including the A-7 are damaged.

1982 – New Jersey, USA. Alcune valvole vengono chiuse intenzionalmente per impedire la partenza di un generatore

1982 – Francia. Cinque razzi vengono lanciati sulla centrale di Creys-Melville

1982 - Stati Uniti: un disoccupato ruba un contenitore di ^{192}Ir e muore

1982 - France: Five rockets fired into Creys-Malville nuclear facility, causing minor damage.

1982 - In mare (informazione tratta dall'Oxburg report, 1992, Gran Bretagna). Damage to some nuclear weapon containers during transfer. There was no damage to any nuclear weapon.

1982 - Garigliano (Caserta - Italia). Si contano al 1982, 18 incidenti alla centrale di Garigliano, di cui il primo fu ufficialmente denunciato solo nel 1980.

1982 - La Plata, Argentina: incidente radioterapico An operator was injured by radiation from an x-ray therapy unit. The individual looked through a window while changing the x-ray tubes, not realizing the system was on. The operator received a whole-body dose of 12 rad and a dose of 580 rad to the lens of both eyes, resulting in cataracts in both eyes.

1982 - USA. Nella centrale di Giuna, uno dei tubi del sistema refrigerante si fessura e scarica acqua bollente radioattiva.

1982 USA. Dopo l'incidente di Giuna si scoprono in altre sette centrali oggetti di metallo dimenticati nei condotti. Molti impianti sono così fermati perché ritenuti poco sicuri.

4 Gennaio 1982 - (incidente unità navale nucleare) Atlantic: A U.S. Navy ship collides with an Italian tanker in the Straits of Messina.

10 Gennaio 1982 - (incidente unità navale nucleare) Indian: The USS Mispillion (T-AO-105) and the civilian tanker Texas Trader, under Navy contract, collide during a routine fuel transfer in the Indian Ocean. There are no personnel injuries and no serious damage to either ship.

16 Gennaio 1982 - (incidente unità navale nucleare) Pacific: Five U.S. Navy personnel die in a diving accident aboard the USS Grayback (SS-574) off the coast of Subic Bay, Philippines.

1 Febbraio 1982 - (incidente unità navale nucleare) Atlantic: In early February, the USS Seattle (AOE-3) is hit by a tug boat while getting underway from Craney Island, Norfolk, Virginia, causing extensive damage to equipment on the ship's aft end.

2 Febbraio 1982 - (incidente unità navale nucleare) Atlantic: The USS Ponce (LPD-15) collides with the USS Fort Snelling (LSD-30) during a towing exercise which causes minor damage to the Ponce's port side, mainly to the accommodation ladder and flight deck catwalk. The two ships were en route to Portsmouth, U.K.

18 Febbraio 1982 - (incidente unità navale nucleare) Atlantic: The South African Navy flagship the frigate President Kruger collides with the naval supply ship Tafelberg during night maneuvers in rough seas and gale force winds south of the Cape of Good Hope and sinks. Thirteen of her crew are reported missing and 177 sailors are saved.

1 Marzo 1982 - (incidente unità navale nucleare) Atlantic: In March both of the USS Inchon's (LPH-12) emergency diesel generators become inoperable during training in the Caribbean. The ship is unable to finish training. A portable emergency diesel generator is attached to the flight deck and the ship is escorted back to Norfolk, Virginia, by the USS Pensacola (LSD-38).

13 Marzo 1982 - (incidente unità navale nucleare) Atlantic: Fourteen aircraft from the carrier USS Forrestal (CV-59) are diverted to Homestead Air Force Base, Florida, after a boiler failure causes a "partial electrical failure" on the carrier. The ship was on exercises off Guantanamo Bay, Cuba.

18 Marzo 1982 - (incidente unità navale nucleare) Indian: The USS Newport (LST-1179) suffers a Bravo Class fire in a main engineering space while anchored at Berbera, Somalia.

22 Marzo 1982 - (incidente unità navale nucleare) Atlantic: The USS Jacksonville (SSN-699) collides with the Turkish cargo ship the General Z. Dogan while running on the surface 25 miles east of Cape Charles, Virginia. Damage to the Jacksonville is reported as minor and characterized as "bumps and scrapes," while bow damage is reported on the General Z. Dogan.

10 Aprile 1982 - (incidente unità navale nucleare) Atlantic: The West German built submarine Pisaqua, built for Venezuela, collides in the Danish Straits with a merchant ship as it is completing its sea trials. The ship is towed to Kiel, Germany.

19 Aprile 1982 - (incidente unità navale nucleare) Atlantic: The Irish fishing boat Sharelga capsizes and sinks in the Irish Sea after being dragged by the Royal Navy diesel submarine HMS Porpoise

which had become entangled in the trawler's nets. The British government initially denies a submarine was in the area, and then admits responsibility two weeks later.

20 Aprile 1982 - (incidente unità navale nucleare) Pacific: The USS Brewton (FF-1086) suffers a casualty to its service diesel generator, curtailing the ship's participation in "Rimpac82" exercises.

20 Aprile 1982 - (incidente unità navale nucleare) Atlantic: Seven people are injured in an explosion aboard the USS Garcia (FF-1040) which is being overhauled at General Shipyard in Boston, Massachusetts.

8 Maggio 1982 - (incidente unità navale nucleare) Pacific: The USS Chauvenet (T-AGS-29) runs hard aground on Dauisan Reef in the Cagayan Islands in the Sulu Sea while underway from Subic Bay, Philippines, to survey grounds in Indonesian waters. After two-and-one-half weeks of salvage efforts, the ship is refloated by U.S. Navy salvage teams and towed to the Ship Repair Facility in Subic Bay.

15 Maggio 1982 - (incidente unità navale nucleare) Atlantic: Swedish coastal authorities report a Soviet destroyer or large frigate is on fire in the Baltic Sea, 22 miles off Latvia.

22 Maggio 1982 - (incidente unità navale nucleare) Pacific: The USS Fletcher (DD-992) strikes the USS Towers (DDG-9) and the USS Francis Hammond (FF-1067) causing minor damage while attempting to moor alongside the two ships in Subic Bay, Philippines.

11 Giugno 1982 - (incidente unità navale nucleare) Atlantic: The USS Seattle (AOE-3) and the USS Aylwin (FF-1081) collide when the Seattle loses steering control while refueling the frigate during transit across the Atlantic to the Mediterranean.

12 Giugno 1982 - (incidente unità navale nucleare) Pacific: The USS Bonefish (SS-582) suffers main engine casualties when all three main engine spaces are flooded while operating on the surface in the Pacific. No material damage or personnel injuries occur.

12 Giugno 1982 - (incidente unità navale nucleare) Pacific: The USS Cleveland (LPD-7) and the USS Ashtabula (AO-51) collide in the Gulf of Thailand during underway replenishment. Damage is minor and there are no injuries.

17 Giugno 1982 - (incidente unità navale nucleare) Atlantic: Ten persons are injured when a 1,200-lb. steam valve ruptures aboard the USS Saratoga (CV-60), which is undergoing a Service Life Extension Program overhaul in Philadelphia Naval Shipyard, Pennsylvania.

20 Giugno 1982 - (incidente unità navale nucleare) Pacific: A target hulk being towed by the USS Reclaimer (ARS-42) scrapes a Chinese tanker while the vessels are leaving Singapore. There are no injuries and damage is minor.

12 Luglio 1982 - (incidente unità navale nucleare) Atlantic: The USS Seattle (AOE-3) suffers a "freak explosion" in the after portion of the ship while moored alongside a fuel pier at Porto Torres, Sardinia, Italy. A chemical reaction between fuel vapors and a chemical stored in one of the blast-torn spaces causes the explosion which damages the after steering compartment and Enlisted Dining Facility. The Seattle is able to get underway for Naples less than 12 hours after the general quarters alarm was first sounded.

15 Luglio 1982 - (incidente unità navale nucleare) Atlantic: In mid-July the 30-foot yacht *Fyfield Five* is struck by an underwater object off the Tuskar Rock off Ireland and sinks. The owner Ken Roberts insists he was sunk by a submarine -- reportedly a periscope crashed up through the keel of his boat. The press is initially skeptical, but then a dockyard worker tells the *Morning Star* newspaper that the Royal Navy diesel submarine *HMS Opossum* was having emergency repairs done to her conning tower in Portsmouth. The Ministry of Defense admits the *Opossum* was damaged in a collision at sea 400 miles west of Plymouth, U.K., on the day Robert's boat sank, but says this is well to the west of where Robert's vessel went down. The Ministry of Defense is unwilling or unable to provide details, but does not deny reports the *Opossum* was hit by a Soviet spy trawler.

Agosto 1982 - New Jersey, USA: valves were found closed on backup diesel generator at Salem Unit II NPS, apparently intentionally, which would prevent generator start-up

8 Agosto 1982 - (incidente unità navale nucleare) Mare di Barents. While on duty in the Barents Sea, there was a release of liquid metal coolant from the reactor of the Soviet Project 705 Alfa-class submarine *K-123*. The accident was caused by a leak in the steam generator. Approximately two tons of metal alloy leaked into the reactor compartment, irreparably damaging the reactor such that it had to be replaced. It took nine years to repair the submarine.

19 Agosto 1982 - (incidente unità navale nucleare) Atlantic: A Royal Navy board is set up to investigate damage done to the Royal Navy nuclear-powered ballistic missile submarine *HMS Revenge's* gearbox caused by the presence of a small, extraneous piece of metal as the submarine is nearing the end of a two-and-a-half-year major refit at Rosyth, Scotland. The damage delays the submarine's scheduled completion date.

2 Settembre 1982 - Kjeller, Norvegia: autoclavatura A technician was maintaining an industrial irradiator used for sterilizing instruments. He did not realize the 65,000 -curie cobalt- 60 source was exposed and was found ill outside the building after less than 25 minutes exposure. Radiation exposure was not immediately recognized, however, and he was hospitalized for treatment for heart attack. Shortly before he died on 15 September it was recognized he was suffering radiation sickness from a dose later estimated at 2,200 rem.

21 Settembre 1982 - (incidente unità navale nucleare) Pacific: The U.S. shrimp boat *Howard M.* operating in the Pacific off Washington state snags what may have been a Soviet submarine, according to the U.S. Department of Defense. The skipper of the boat *Danny Parker* reports he was dragged about a mile and a half until a cable snapped.

28 Settembre 1982 - (incidente unità navale nucleare) Pacific: The *USS Sam Houston (SSN-609)* spills less than 50 gallons of low-level radioactive water during a test while it is in the Puget Sound Naval Shipyard, Bremerton, Washington, undergoing routine maintenance, according to the Navy. The spill was stopped, the water was contained within the ship, and no radioactivity was released to the environment. The submarine's reactor was not operating. Two individuals were in the area during the spill and one of these individuals received low-level radioactive contamination.

29 Novembre 1982 - (incidente unità navale nucleare) Pacific: The *USS Thomas A. Edison (SSN-610)* collides with the *USS Leftwich (DD-984)* in the South China Sea 40 miles east of Subic Bay, Philippines. The *Edison* was at periscope depth preparing to surface; it damaged its sail and sail planes, but there was no flooding. Both ships remain operational after the accident.

12 Dicembre 1982 - (incidente unità navale nucleare) Atlantic: The Royal Navy nuclear-powered attack submarine HMS Spartanis caught in the nets of the English trawler Algrie off Land's End, Cornwall, U.K., in the Celtic Sea. As the trawler is dragged forward the fishermen radio to shore, and several minutes later the submarine surfaces with the nets and tackle laying across the vessel. The nets, costing 7-8,000 pounds sterling, are cut free, and the submarine continues on its patrol.

31 Dicembre 1982 - (incidente unità navale nucleare) Pacific: In late 1982 the USS Permit (SSN-594), cruising on the surface, collides with the USS La Jolla (SSN-701), at periscope depth, while they are on sea trials about 30 miles off San Francisco. The Permit receives a ten-foot-long, three-foot-wide "scrape" in the paint on the keel, while the La Jolla suffers minor rudder damage.

1983 - Cade in oceano un missile sovietico contenente materiale radioattivo

1983 - West Germany: Four West Germans gain forced entry to a Pershing missile site and attempt to destroy a missile with crowbars.

1983 – Germania. Quattro terroristi forzano l'ingresso di un centro nucleare e tentano di distruggere un missile Pershing.

3 Gennaio 1983 - The Soviet nuclear-powered spy satellite Kosmos 1402 burns up over the South Atlantic

3 Gennaio 1983 - (incidente unità navale nucleare) Atlantic: The USS Arkansas (CGN-41) collides with the Italian merchantman Megara Ilea in the Strait of Messina, and is "slightly damaged on the port side."

19 Gennaio 1983 - (incidente unità navale nucleare) Pacific: The USS Kitty Hawk (CV-63) has a minor collision with the Canadian Maritime Forces Ship Yukon off the coast of Washington state. There are no personnel injuries or serious damage.

22 Gennaio 1983 - (incidente unità navale nucleare) Atlantic: The East German passenger ship Volkerfreundschaft collides with a West German submarine north of Rostock, East Germany, in the Baltic Sea with no injuries resulting.

10 Febbraio 1983 - (incidente unità navale nucleare) Atlantic: In the Atlantic the USS Antrim (FFG-20) suffers a fire in the wardroom and Computer/Radar Electronics spaces after it is struck by a drone during live firing of the Phalanx self-defense close-in-weapon-system Gatling gun. A civilian instructor dies from burns caused by the ignition of residual fuel in the target drone.

25 Febbraio 1983 - (incidente unità navale nucleare) Atlantic: The Royal Navy mine hunter HMS Brocklesby and the coastal minesweeper HMS Nurton collide about two miles off Portland harbor, U.K., during routine exercises.

10 Marzo 1983 - (incidente unità navale nucleare) Atlantic: An unknown Royal Navy submarine is involved with an incident with the fishing vessel Targuen.

11 Marzo 1983 - (incidente unità navale nucleare) Atlantic: A Danish trawler catches a Danish submarine in its nets off Bornholm Island in the Baltic Sea.

15 Marzo 1983 - (incidente unità navale nucleare) Atlantic: About 15 miles south of the Danish island of Bornholm in the Baltic Sea, the West German fishing trawler Gertraud catches a Soviet or

Polish Whiskey class diesel-powered attack submarine in its nets. The trawler is surrounded by Warsaw Pact warships on maneuvers in the area as the submarine surfaces so its the crew can cut the submarine free. The submarine resubmerges, leaving the trawler with a damaged net.

16 Marzo 1983 - (incidente unità navale nucleare) Atlantic: The USS Antrim (FFG-20) collides with the USS Flatley (FFG-21) 160 miles north of Puerto Rico during training exercises. Both received only superficial damage.

1 Aprile 1983 - (incidente unità navale nucleare) Indian: In April during an Indian Ocean deployment the USS Dale (CG-19) collides with the Royal Navy frigate HMS Ambascade. The Ambascade is laid up in Bombay during May while work on "new bow material" is carried out.

28 Aprile 1983 - (incidente unità navale nucleare) Pacific: The USS Enterprise (CVN-65) runs aground within sight of the port of San Francisco, California, after eight months at sea; it is stranded for five hours until the tide and tugs pull it free.

1 Giugno 1983 - (incidente unità navale nucleare) Pacific: In June a Soviet Charlie class nuclear-powered cruise missile submarine sinks somewhere east of the Soviet naval base of Petropavlosk, near the southern tip of the Kamchatka peninsula in the Pacific. U.S. intelligence reports most or all of the 90-person crew are lost. The cause of the accident is not known, but the lack of radioactive contamination is said to indicate that the accident was probably due to mechanical failure, not a nuclear power plant accident. The submarine is salvaged by the Soviet Navy in early August 1983.

1 Luglio 1983 - (incidente unità navale nucleare) Pacific: In July a gunnery computer malfunction causes the USS George Philip (FFG-12) to fire a 3-inch shell toward a Mexican merchant vessel during a drill about 40 miles off San Francisco, California. According to the Navy the round landed nine miles behind the merchant ship, but some George Philip crewmen say it actually landed just one mile behind the ship.

18 Luglio 1983 - (incidente unità navale nucleare) Pacific: The USS Ranger (CV-61) collides with the USS Wichita (AOR-1) during refueling 100 miles off San Diego, California. The Ranger's flight deck elevator is damaged, but no injuries are reported. The Wichita damages its refueling capability. The port fueling rigging is put out of commission, including the loss of all fuel hoses. Also part of the Wichita's aft superstructure is crushed on the starboard side.

19 Luglio 1983 - (incidente unità navale nucleare) Pacific: The USS Texas (CGN-39) is holed above the waterline after hitting a quay while leaving the port of Brisbane, Australia.

26 Luglio 1983 - (incidente unità navale nucleare) : A West German reconnaissance ship collides with an East German naval vessel.

Agosto 1983 - M8, vicino a Glasgow, Scozia, Gran Bretagna. A RAF nuclear weapon load carrier carrying two warheads for Polaris missiles was involved in a collision with a private car. Minor damage was caused to the load carrier. There was no damage to the warheads.

1 Agosto 1983 - (incidente unità navale nucleare) Pacific: In August the USS Davidson (FF-1045) suffers a Class Alpha fire while in the Pacific.

18 Settembre 1983 - (incidente unità navale nucleare) Atlantic: The Royal Navy nuclear-powered attack submarine HMS Conqueror suffers a fire while in drydock in Devonport, U.K., for a refit. No injuries are reported.

23 Settembre 1983 - Constituyentes, Argentina: criticità di incidente con uranio in acqua An accident occurred during operation of the RA-2 research reactor. Two fuel elements had been placed outside the graphite reflector surrounding the reactor but had not been removed from the tank. A technician was changing the fuel configuration from the control room while moderating water was in the reactor, a procedural violation. A criticality excursion occurred, exposing the operator to a 3,700-rad dose (2000 rad gamma and 1700 rad neutron), with the upper right side of the body exposed the worst. The operator died 2 days later. Two others in the control room received doses of 35 rad each.

30 Settembre 1983 - (incidente unità navale nucleare) Atlantic: The Royal Navy assault ship HMS Fearless is slightly damaged in collision with a West German tanker.

26 Ottobre 1983 - (incidente unità navale nucleare) Atlantic: The Brixham, U.K., trawler Esther Colleen is badly holed when it rams the Royal Navy frigate HMS Ambuscade in heavy fog off Torbay, Devon, U.K. The frigate suffered minor damage.

26 Ottobre 1983 - (incidente unità navale nucleare) : A seaman is dismissed and jailed for starting a fire aboard the Royal Navy frigate HMS Penelope.

31 Ottobre 1983 - (incidente unità navale nucleare) Atlantic: The USS McCloy (FF-1038) is towing a sonar array west of Bermuda when suddenly the cable goes slack. The next day a Soviet Victor III class nuclear-powered attack submarine is sighted motionless on the surface 282 miles west of Bermuda and 470 miles east of Charleston, South Carolina, by a U.S. P-3 Orion patrol aircraft. U.S. Navy officials believe that while the submarine was following the McCloy, the sonar array caught in the submarine's propeller. There is no indication of leaking radiation, according to a Navy spokesman. On 5 November the submarine is taken under tow by a Soviet salvage ship in the direction of the Cuban port of Cienfuegos. Further observation while the submarine is undertow leads the Navy to believe the damage is relatively minor and relates to the submarine's propeller.

Novembre 1983 – Sellafield (Gran Bretagna). Lo scarico di liquidi radioattivi nel Mare d'Irlanda provoca la reazione di cittadini ed ecologisti, che sollecitano la chiusura della centrale nucleare di Sellafield, in Gran Bretagna.

1 Novembre 1983 - (incidente unità navale nucleare) : A fire breaks out aboard the USS Ranger (CV-61) while deployed in the North Arabian Sea, killing six and injuring 35. The fire is in one of the four main machinery spaces and reportedly is extinguished within an hour though there is one reflash which is extinguished. The vessel continues operations in the North Arabian Sea.

17 Novembre 1983 - (incidente unità navale nucleare) Indian: The Soviet Krivak I class frigate Razyaschy collides with the USS Fife (DD-991) in the North Arabian Sea, causing minor damage to the Fife but no casualties. Reportedly the Razyaschy attempted to approach the USS Ranger (CV-61). When the Fife attempted to head off the Soviet ship, the two ships grazed hulls, leaving two 15-foot scrapes in the Fife's paint. Reports say the Soviet ship earlier narrowly had missed a collision with another U.S. vessel.

22 Novembre 1983 - (incidente unità navale nucleare) Pacific: The USS Kitty Hawk (CV-63) and the USS Wabash (AOR-5) have a minor collision during refueling in Oakland, California.

27 Novembre 1983 - (incidente unità navale nucleare) Atlantic: The lead ship of the Soviet Slava class cruisers returns to the Black Sea after sustaining possible engine damage while on its maiden voyage to the Soviet Northern Fleet. The ship had left the Black Sea on 16 September

6 Dicembre 1983/Febbraio 1984 - Ciudad Juarez, Messico: dispersione di fonte radiografica compromessa A scrap yard in Ciudad Juarez obtained a used medical teletherapy unit containing about 6,000 1-millimeter pellets of cobalt-60, totalling over 400 curies. On 6 December the source container was deliberately ruptured, scattering pellets throughout the yard. A magnetic loader further dispersed the pellets, many of which ended up in scrap metal converted into steel products around 10 December. Products included steel rebar from a Chihuahua plant, table pedestals from Falcon Products Company in Juarez (some of both items were shipped to the USA), products from a foundry in Torreon, and products from a producer in Guadalajara. The contamination was undetected until 16 January 1984, when a truck carrying contaminated rebar took a wrong turn at the Los Alamos Scientific Laboratory in New Mexico, triggering automatic radiation sensors. Later that day five other trucks carrying contaminated steel were stopped at a border crossing at El Paso, Texas. Efforts to collect contaminated steel progressed over the next few weeks, with about 500 to 931 tons estimated to have entered the USA. In late January contaminated steel was traced to a table manufacturer in St. Louis, Missouri, and 2,500 castings were recalled from 40 states and replaced; most tables were in warehouses but some were removed from restaurants. In February Mexican authorities reported 3 or 4 individuals had received doses of 100 to 450 rem. The U.S. DOE assisted Mexico in aerial surveys 20-26 March which identified 21 contaminated areas. One contaminated pickup truck was found in a residential neighborhood with children playing in it. In Sinaloa Mexican authorities demolished 109 houses built with contaminated rebar. One worker subsequently died of bone cancer, with another 4 injured. A total of at least 10 individuals received significant exposures.

10 Dicembre 1983 - (incidente unità navale nucleare) Atlantic: The crew of the Royal Navy patrol boat HMS Vigilant is rescued after the vessel gets into difficulties off Northern Ireland.

19 Dicembre 1983 - (incidente unità navale nucleare) Atlantic: The Trident submarine USS Florida (SSBN-728) is slightly damaged when it hits an unidentified object while submerged during sea trials in Long Island Sound. No one is injured and a Navy spokesman says he has no cost estimate on the damage.

31 Dicembre 1983 - (incidente unità navale nucleare) Pacific: In 1983 hull collision damage was repaired and the sonar dome rubber window was changed on the USS Leftwich (DD-984).

31 Dicembre 1983 - (incidente unità navale nucleare) Pacific: In 1983 extensive temporary sail repairs are accomplished on the USS Thomas A. Edison (SSN-610).

1984 - Ungheria: spegnimento in emergenza di uno dei reattori di Paks

1984 – Stati Uniti. Alcuni pacifisti danneggiano seriamente con un cacciavite l'equipaggiamento di un missile ICBM Minuteman in un silos nucleare dl Missouri

1984 - Mendoza, Argentina: incidente radiografico An operator pushed an iridium-192 source into a camera using a finger, resulting in a dose of 1,800 rad to the finger, causing a radiation burn. The operator received a whole body dose of 11 rad.

9 Gennaio 1984 - (incidente unità navale nucleare) Atlantic: The USS Detroit (AOE-4) suffers a Class Bravo fire in the 1A1 Forced Draft Blower while moored at Souda Bay, Crete. Several crew members are treated for smoke inhalation.

10 Gennaio 1984 - Warren AFB, Cheyenne, Wyoming, USA. La Warren Air Force Base a Cheyenne, nello stato americano del Wyoming, registra un messaggio che uno dei suoi missili balistici intercontinentali Minuteman III è pronto al lancio, dalla sua base sotterranea, a causa di un malfunzionamento del computer. Per prevenire il possibile lancio, un mezzo corazzato viene sistemato sulla sommità della base sotterranea di lancio

14 Febbraio 1984 - (incidente unità navale nucleare) Atlantic: During attempts to move an assault craft to Radio Island, near Moorehead City, North Carolina, the USS Ponce (LPD-15) suffers a major casualty when her sterngate is damaged and eventually lost. The Ponce goes to Philadelphia Naval Shipyard for repairs.

15 Febbraio 1984 - (incidente unità navale nucleare) Atlantic: The U.S. Navy's Nuclear Weapons Training Group Atlantic submits an "OPREP-3 Navy Blue Bent Spear [nuclear weapons incident] as a result of a material failure in a W80 trainer [warhead for the](Tomahawk) [sea-launched cruise missile]."

Marzo 1984 - Casablanca, Marocco: fonte radiografica compromessa A 16.3-curie iridium-192 industrial radiography source was lost and taken home by a laborer. The laborer had laid the source on a table in the family bedroom, and it was in the house for possibly a few weeks. Exposure to radiation caused the deaths of 8 family members, including 4 children and their parents within a few days of each other, about 45 days after exposure. Three other people received significant exposures. Diagnosis of radiation exposure was only made 80 days after initial exposure.

1 Marzo 1984 - (incidente unità navale nucleare) Atlantic: A Soviet Kresta II class cruiser suffers a two-hour fire while it is monitoring a NATO exercise in the Mediterranean.

8 Marzo 1984 - (incidente unità navale nucleare) Atlantic: An unidentified submarine drags the Clogherhead, Ireland, trawler Oriel astern for two miles east of County Louth, Ireland. The skipper cuts the nets to free his boat. An official Irish Ministry of Transport inquiry takes place but its findings are never made public.

12 Marzo 1984 - (incidente unità navale nucleare) Pacific: The USS Kitty Hawk (CV-63) is struck during night operations by a surfacing Soviet Victor I nuclear-powered attack submarine in the southern Sea of Japan, approximately 100 miles from mainland Japan, while en route to the Yellow Sea. The Kitty Hawk sustains a minor hole below the waterline in an aircraft fuel tank on the starboard side and continues normal operations. The Soviet vessel is observed dead in the water for awhile with a dent across its aft deck. It is assisted by the Soviet Kara class cruiser Petropavlovsk and later is towed by a Soviet salvage vessel to the Vladivostok naval base. U.S. Navy officers say there was no evidence of nuclear leakage from the submarine. The Kitty Hawk had been taking part in joint U.S.-Korea "Team Spirit 84" exercises. The submarine had been following the Kitty Hawk carrier group with other surface ships for several days. Navy officials claim the carrier's escort ships deliberately broke contact with the submarine after simulating its destruction 15 times to begin a new phase in the exercise where the Kitty Hawk would use deception techniques to lose the trailing Soviet surface ships. The Soviet submarine apparently lost track of the Kitty Hawk and was surfacing to find it when the collision occurred. 21 Marzo 1984 - Giappone. Collisione tra un sottomarino nucleare sovietico e la portaerei americana "Kitty Hawk" al largo delle coste giapponesi

24 Marzo 1984 - Iran. Caccia iracheni conducono un raid aereo sulla centrale iraniana di Bushehr

29 Marzo 1984 - (incidente unità navale nucleare) Atlantic: The Danish fishing boat Ane Kathrine is dragged under by the West German diesel submarine Simpson, which was on sea trials in the North Sea prior to delivery to Chile, killing three.

2 Aprile 1984 - (incidente unità navale nucleare) Atlantic: The Glasgow Herald reports the U.S. Navy at Holy Loch, Scotland admits that the paint on the USS Sam Rayburn (SSBN-635) was mildly radioactive when it returned from patrol in February 1984. The Navy says this is very low-level radioactivity, so low that it could not be detected by a geiger counter. Reports about the radiation had been circulating for a month, leading to claims that the Sam Rayburn had been in a collision sometime in the fall of 1983 which had caused the ship to leak or become contaminated with radiation. The Navy's statements serve to add to the controversy.

2 Aprile 1984 - (incidente unità navale nucleare) Pacific: At midday in the South China Sea the Soviet carrier Minsk fires eight signal flares at the USS Harold E. Holt (FF-1074) when the latter passes the Minsk's starboard side at a distance of 300 meters after disregarding a request from the Minsk to stand clear. Three flares strike the Holt but no one is injured. A U.S. Navy official acknowledges equal U.S. blame for the incident.

10 Aprile 1984 - (incidente unità navale nucleare) Pacific: In April the USS Barbour County (LST-1195) runs aground on the Coronado strand in San Diego, California, but the ship is successfully extracted in less than 24 hours.

12 Aprile 1984 - (incidente unità navale nucleare) Atlantic: The Royal Navy frigate HMS Plymouth collides with the West German frigate Braunschweig in heavy fog while taking part in NATO exercises in the Baltic Sea.

23 Aprile 1984 - (incidente unità navale nucleare) Atlantic: While getting underway from Norfolk, Virginia, the USS Kittiwake (ASR-13) backs down on the USS Bergall (SSN-667), causing damage to the Bergall's sonar dome and the Kittiwake's propeller.

Maggio 1984 - Germania. (informazione tratta dall'Oxburg report, 1992, Gran Bretagna). A WE// nuclear weapon in its container was being moved on a trolley. The container had not been correctly secured and fell about 1 metre from the trolley during transit. The weapon casing suffered superficial damage from a toolbox which was fitted as standard to the inside of the container.

17 Maggio 1984 - (incidente unità navale nucleare) Pacific: A fire breaks out aboard the USS Guitarro (SSN-665) during a training exercise 65 miles north west of San Diego, California, near San Clemente Island. Officials said that the fire originated in the submarine's battery well due to high heat from electrical discharge on one of the cells. A sailor making rounds discovered heat, steam, and a glow emitting from the battery well when he opened a well hatch. The submarine headed for port and the crew had the fire under control but still burning when the submarine arrived.

19 Maggio 1984 - (incidente unità navale nucleare) Atlantic: The Royal Navy Antarctic support ship HMS Endurance returns from Antarctica with a hole in its hull.

6 Giugno 1984 - (incidente unità navale nucleare) Atlantic: The USS Sumter (LST-1181) undergoes repairs to the starboard propeller shaft until 18 June at the Little Creek Amphibious Base, Virginia.

Sections of the pitch control rod and hydraulic control components within the starboard shaft and propeller assembly are repaired.

11 Giugno 1984 - (incidente unità navale nucleare) Atlantico: During work-ups off the coast of North Carolina the USS Inchon (LPH-12) develops a leak in the fuel oil transfer system and returns to Norfolk, Virginia, for repairs.

14 Giugno 1984 - (incidente unità navale nucleare) Atlantico: The Royal Navy frigate HMS Jupiter hits the London Bridge while attempting a U-turn in the Thames River.

15 Giugno 1984 - (incidente unità navale nucleare) Indiano: While operating in the Indian Ocean, a F-14 Tomcat aircraft from Fighter Squadron 33 crashes on the flight deck of the USS America (CV-66) in a Class Alpha accident causing more than \$500,000 in damage but no injuries.

20 Giugno 1984 - (incidente unità navale nucleare) Atlantico: A Soviet Whiskey class diesel-powered attack submarine is trapped for three and a half hours in fishing wire of a Norwegian trawler in international waters in the North Sea. The submarine is freed only after surfacing and being aided by the Norwegian Coast Guard.

11 Agosto 1984 - (incidente unità navale nucleare) Atlantico: The USS Nathanael Greene (SSBN-636) reportedly loses her propeller in the Irish Sea. The submarine proceeds back to Holy Loch, Scotland, using its secondary propulsion system. Facilities at the U.S. base are unavailable, so the submarine is towed to the nearby British submarine base at Faslane, Scotland.

11 Agosto 1984 - (incidente unità navale nucleare) Atlantico: The Royal Navy large fleet tanker HMS Olwen is hit by a storm 700 miles north east of the Falkland Islands, killing two.

14 Agosto 1984 - (incidente unità navale nucleare) Atlantico: An unidentified submarine drags the British trawler Joanne C. around the English Channel for three hours at night after becoming entangled in the trawler's nets eight miles off the U.K.'s south west coast. When the boat radioed for help the Coast Guard told it to cut its nets as the Royal Navy did have a submarine in the area. The Ministry of Defense later says the only Royal Navy submarine in the area was 30 miles away and that no U.S. submarines were nearby, leading to speculation the submarine belongs to the Soviet Union or another Warsaw Pact nation. Yet on 15 September the skipper of the Joanne C. receives compensation of more than 2,000 pounds sterling from the Ministry of Defense, something the Ministry earlier said it would do if a Royal Navy ship was found to be at fault.

18 Agosto 1984 - (incidente unità navale nucleare) Atlantico: A fire reportedly breaks out on board a drydock at the Faslane Royal Navy nuclear submarine base in Scotland while the USS Nathanael Greene (SSBN-636) is in the dock for repairs. A U.K. Ministry of Defense official says the fire was caused by an electrical fault in a capstan motor which ignited a small quantity of canvas atop the motor. He denies the fire threatened the submarine, since it broke out in a sealed compartment some distance from the boat. A spokesman for the U.S. Navy confirms the submarine was not damaged, though he refuses to say whether the ship had nuclear weapons on board.

Settembre 1984 - Unione Sovietica. Prende fuoco un sommergibile nucleare sovietico ma riesce a raggiungere la base

10 Settembre 1984 - (incidente unità navale nucleare) Atlantico: Fire in the exhaust vent of the USS Ticonderoga (CG-47) injures 13 crew members and forces the vessel to return to its home base of Norfolk, Virginia, for repairs. The cause of the fire is unknown.

18 Settembre 1984 - (incidente unità navale nucleare) Pacific: The Japanese shrimping boat Sumiyoshi Maru catches a submarine in its net in the Sea of Japan. The vessel is pulled backward until the 3-centimeter steel wire holding the net is cut. On 20 September a Soviet Golf II class diesel-powered ballistic missile submarine is sighted on the surface with white smoke coming out of its conning tower in the Sea of Japan, 380 miles west of Tokyo. Reports speculate the smoke comes from a fire started by an electrical overload caused by the snagging of the fishing boat's net. Over the next two days the submarine is attended by several Soviet ships, before proceeding toward Vladivostok under its own power on the 23 September.

18 Settembre 1984 - (incidente unità navale nucleare) Atlantic: A Soviet Victor I class nuclear-powered attack submarine is badly damaged in a collision with a Soviet tanker in the Strait of Gibraltar. The submarine reportedly was travelling in the "noise shadow" of the tanker while exiting the Mediterranean Sea. Jane's Defense Weekly notes that the alternating layers of cold and warm water in the narrows of the Strait make it likely for a submarine "to encounter sudden thermal gradients which make her porpoise upwards," and this is thought to be the cause of the accident. The collision rips off the twin-hulled submarine's bow section, exposing the sonar and torpedo tube compartments. The submarine proceeds to the Soviet anchorage at Hammament, Tunisia, for emergency repairs, before returning to its homeport on the Kola peninsula in early October.

21 Settembre 1984 - (incidente unità navale nucleare) Atlantic: The USS Jacksonville (SSN-699) collides with a Navy barge off Norfolk, Virginia, while travelling on the surface. The Jacksonville strikes the barge amidships and is reported to have caused minor damage to her bow.

26 Settembre 1984 - (incidente unità navale nucleare) Pacific: The USS Shasta (AE-33) collides with the USS Cleveland (LPD-7) during a practice replenishment at sea 30 miles west of Long Beach, California. Both ships sustain minor damage. The Shasta is able to continue normal operations.

19 Ottobre 1984 - (incidente unità navale nucleare) Atlantic: The Royal Navy frigate HMS Glamorgan collides with the German frigate Bremen in a gale.

26 Ottobre 1984 - (incidente unità navale nucleare) Pacific: The USS John A. Moore (FFG-19) collides with the USS Ouellet (FF-1077) near Hawaii during "FleetEx 85-1" exercises in the Pacific, causing minor damage.

29 Ottobre 1984 - (incidente unità navale nucleare) Pacific: The USS Roanoke (AOR-7) is grounded just outside the entrance to Pearl Harbor, Hawaii, after suffering a steering casualty, but rides free eight hours later and returns to port.

12 Novembre 1984 - Missouri: Four Catholic peace activists of the Silo Pruning Hooks entered Minuteman ICBM site near Higginsville and did over \$10,000 worth of damage to equipment with a jack hammer; all were arrested and charged with destruction of federal property

17 Dicembre 1984 - (incidente unità navale nucleare) Atlantic: The USS Coral Sea (CV-43) suffers a minor engine room fire during overhaul at Norfolk Naval Shipyard, Virginia. The fire is extinguished in an hour with three men injured and \$6,000 damage to the vessel.

31 Dicembre 1984 - (incidente unità navale nucleare) Pacific: In 1984 the USS Thomaston (LSD-28) has an emergency drydocking to accomplish underwater hull repairs sustained as a result of a grounding.

31 Dicembre 1984 - (incidente unità navale nucleare) Pacific: In 1984 ship repair contractors in Sasebo, Japan, accomplish \$288,965 of repair work on the USS Darter (SS-576) during an emergency 45-day drydocking to repair damages following a collision.

31 Dicembre 1984 - (incidente unità navale nucleare) Pacific: In 1984 the USS Sterett (CG-31) has an emergency drydocking to repair the sonar dome rubber window, replace the inflatable shaft boots, repack the rudder posts, and do other various underwater hull work.

31 Dicembre 1984 - (incidente unità navale nucleare) : In 1984 the USS Tattnell (DDG-19) suffers a major fire.

31 Dicembre 1984 - (incidente unità navale nucleare) Pacific: In 1984 the USS Beaufort (ATS-2) receives underwater hull, shafting, and controllable pitch propeller repairs for damage sustained as a result of a grounding.

31 Dicembre 1984 - (incidente unità navale nucleare) : In 1984 the USS Ranger (CV-61) suffers two major fires.

1985 - Stati Uniti: viene trovata contaminazione da plutonio (femtocurie) in un serbatoio dell'acqua potabile di New York City

1985 - Nikko, Baia di Sagami, Giappone. Dispersione di DU in seguito ad incidente aereo (volo Jal)

1985 - Cina: incidente di acceleratore An accident involving an electron accelerator caused significant exposures to 2 people.

1985 - Cina: incidente radioterapico An accident involving radiotherapy using gold-197 caused injurious internal doses to 2 people, one of whom died as a result.

1985 -Cina: incidente da irradiazione An accident involving cesium-137 resulted in doses of 800 to 1,000 rem to 3 people.

1985 - Odessa, Texas, USA: incidente da irradiazione A radiography source in an unshielded position caused excessive exposure and a radiation burn to an individual's hand.

5 Febbraio 1985 - (incidente unità navale nucleare) Indian: The USS Ingersoll (DD-990) suffers a casualty to the port oil distribution box, requiring the ship to leave its battle group in the Indian Ocean.

10 Febbraio 1985 - Germania Ovest. Un missile americano Pershing 2 prende fuoco a Heilbronn, scagliando dei frammenti roventi del missile fino a 228 m. da uno stock di testate nucleari.

12 Febbraio 1985 - Iran. Caccia iracheni conducono un raid aereo sulla centrale iraniana di Bushehr

4 Marzo 1985 - Iran. Caccia iracheni conducono un raid aereo sulla centrale iraniana di Bushehr

Aprile 1985 - New York, USA: Credible claim emerged that New York City's water reservoirs had been contaminated with plutonium; testing detected femtocurie levels of plutonium in the water

11 Aprile 1985 - (incidente unità navale nucleare) Atlantic: The USS Coral Sea (CV-43) collides with the Ecuadorean tanker Napo during air operations 45 miles south west of Guantanamo Bay, Cuba. A 30-foot hole in the carrier's bow is punched in, and some radar and communications equipment is damaged. The Coral Sea returns to drydock in Norfolk Naval Shipyard, Virginia. Eleven aircraft airborne at the time of the accident are diverted to Guantanamo Bay. The Napo is holed above the waterline and spills 7,600 barrels of oil before reaching Guantanamo for repairs. A formal investigation later blames the Commanding Officer of the Coral Sea for the incident, saying he "used poor judgment in electing to be absent from the bridge during the entire launch and recovery cycle ... with a Soviet vessel within 1,500 yards and with other vessels well within" the closest point of approach limits the captain had established.

Giugno 1985 - Arizona, USA: Report of intentional tampering with water valves at Palo Verde NPS

Giugno 1985 - Vicino a Glasgow, Scozia, Gran Bretagna. (informazione tratta dall'Oxburg report, 1992, Gran Bretagna). Brake failure on a nuclear weapon load carrier. There was no damage to any nuclear weapon.

3 Giugno 1985 - Marietta, Georgia, USA: incidente radioterapico A defect in the computer program controlling the Therac-25 radiation therapy accelerator resulted in an overexposure to a patient. A 61-year old woman received a localized dose of 15,000 to 20,000 rads and immediately reported pain. Operators did not recognize the accident until the woman developed severe radiation burns later, eventually requiring removal of one breast and caused permanent impairment.

10 Giugno 1985 - (incidente unità navale nucleare) Atlantic: The Royal Navy nuclear-powered ballistic missile submarine HMS Resolution is struck by the U.S. yacht Proud Mary off Cape Canaveral, Florida, in the early morning. The submarine suffers minor damage, but the yacht has to be towed back to port. The Resolution on its way to test-fire one of her Polaris missiles on the U.S. Navy's Atlantic Test Range after undergoing a major refit in Rosyth naval shipyard, Scotland.

22 Luglio 1985 - (incidente unità navale nucleare) Atlantic: A dive team embarks on board the USS Powhatan (T-ATF-166) to debeach the USS Boulder (LST-1190) in Chesapeake Bay.

26 Luglio 1985 - Hamilton, Ontario, Canada: incidente radioterapico A defect in the computer program controlling the Therac-25 radiation therapy accelerator resulted in an overexposure to a patient. A 40-year old woman being treated for cancer received a localized dose of 13,000 to 17,000 rads and quickly reported pain. Operators did not recognize the accident until the woman returned to the clinic with radiation burns on 29 July. The patient died of the original cancer on 3 November 1985.

5 Agosto 1985 - (incidente unità navale nucleare) Atlantic: The Royal Navy aircraft carrier HMS Ark Royal is blown from its berth at Portland, U.K., by 50-mile-per-hour winds. No damage is done and two Navy tugs move the ship back into place.

10 Agosto 1985 – Baia di Chazma, Vladivostok, URSS. Un'esplosione devasta il sottomarino sperimentale (progetto 570) atomico sovietico Shkotovo-22: muoiono dieci membri dell'equipaggio esposti alle radiazioni. Furono misurati più di 100.000 Ci di radioattività. I duemila abitanti della baia non furono mai evacuati. Il sottomarino, con i suoi materiali radioattivi, giace in fondo alla baia, sotto diversi metri di sedimenti An explosion occurred during refueling of the submarine K-431 at Chazhma Bay, Vladivostok. The K-431, completed around 1965 as unit K-31, was a Project 675 (Echo II) class submarine with two pressurized water reactors, each 70 MWt capacity and using 20% enriched uranium as fuel. (Note that some sources confuse this submarine with K-314, a

Project 671 or Victor I class submarine launched in 1972 and withdrawn from service after a reactor accident in December 1985.) On 10 August 1985, the submarine was being refueled at the Chazhma Bay naval facility near Vladivostok. The submarine had been refueled and the reactor tank lid was being replaced. The lid was laid incorrectly and had to be lifted again with the control rods attached. A beam was supposed to prevent the lid from being lifted too far, but this beam was positioned incorrectly, and the lid with control rods were lifted too far up. At 10:55 AM the starboard reactor became supercritical, resulting in a criticality excursion of about 5×10^{18} fissions and a thermal/steam explosion. The explosion expelled the new load of fuel, destroyed the machine enclosures, rupturing the submarine's pressure hull and aft bulkhead, and partially destroyed the fuelling shack, with the shack's roof falling 70 meters away in the water. A fire followed which was extinguished after 4 hours, after which assessment of the radioactive contamination began. Most of the radioactive debris fell within 50-100 meters of the submarine, but a cloud of radioactive gas and particulates blew to the northwest across a 6-km stretch of the Dunai Peninsula, missing the town of Shkotovo-22, 1.5 km from the dock. The contaminated forest area was later surveyed as 2 square km in a swath 3.5 km long and 200-650 meters wide. Estimates initial radioactive release was about 2 MCi of noble gases and 5 MCi of other fission products, but most of this was short-lived isotopes; the estimated release inventory one hour after the accident was about 1000 Ci of non-noble fission products. In part because the reactor did not contain spent fuel, the fraction of biologically active isotopes was far smaller than in the case of the Chernobyl reactor accident.

Ten naval personnel were killed (8 officers and 2 enlisted men), probably by the explosion itself and not from radiation injuries. Radiation injuries were observed in 49 people, with 10 developing radiation sickness; the latter figure included mostly firefighters, some of whom sustained doses up to 220 rad external and 400 rem to the thyroid gland. Of the 2,000 involved in cleanup operations, 290 were exposed to high levels of radiation compared to normal standards.

High-level waste gathered during clean-up operations were placed in temporary disposal sites. Due to the rapid decay of most of the reactor products and the cleanup operations, some dockyard facilities were able to resume operations four days later. About two months post-accident the radioactivity in water in the cove was comparable to background levels, and 5-7 months post-accident the radiation levels were considered normal throughout the dock area. The damaged submarine was towed to Pavlovsk Bay and berthed there.

Settembre 1985/6 Gennaio 1986 - Yakima, Washington, USA: incidente radioterapico A defect in the computer program controlling the Therac-25 radiation therapy accelerator resulted in overexposures to patients. A woman who received several treatments from September 1985 to 6 January 1986 developed radiation burns which were not recognized as radiation injuries until another injury occurred in 1987.

1 Settembre 1985 - (incidente unità navale nucleare) Pacific: In the Pacific, an H-46 helicopter crashes on board the USS Fife (DD-991) and slips off the deck, but is somehow held to the side by the Fife's crew. Nearby vessels provide assistance and no injuries occur.

1 Settembre 1985 - (incidente unità navale nucleare) Pacific: In September the USS Darter (SS-576) collides with a Bahamanian merchant ship about 10 kilometers off Pusan, South Korea. The U.S. Navy says there were no injuries.

25 Settembre 1985 - (incidente unità navale nucleare) Atlantic: The Soviet military training auxiliary ship Khasan collides with the Turkish fast attack craft Meltem in the Bosphorus, slicing it in two. There is thick fog at the time of the collision.

15 Ottobre 1985 - (incidente unità navale nucleare) Atlantic: The USS Estocin (FFG-15) runs aground near Key West, Florida.

24 Ottobre 1985 - (incidente unità navale nucleare) Pacific: The USS Swordfish (SSN-579) suffers a propulsion casualty while operating as part of the U.S. Pacific Fleet.

31 Ottobre 1985 - (incidente unità navale nucleare) Atlantic: A Soviet minesweeper collides with a Swedish spy ship in the Baltic Sea.

2 Novembre 1985 - (incidente unità navale nucleare) Pacific: The USS Enterprise (CVN-65) is grounded on Bishop's Rock shoal about 100 miles west of San Diego, California. Reports say the Enterprise sustains a 60-foot gash in the outer hull and damages one propeller. The aircraft carrier continues planned operations, taking part in the "ReadiEx 86-1" exercise before going into drydock on 27 November.

4 Novembre 1985 - (incidente unità navale nucleare) Atlantic: The USS Caloosahatchee (AO-98) grounds on the Elizabeth River near Norfolk, Virginia, taking two days to refloat.

17 Novembre 1985 - (incidente unità navale nucleare) : The CH-46 vertical replenishment helicopter of the USS San Diego (AFS-6) crashes into a parked Marine Corps helicopter on board the USS Iwo Jima (LPH-2) during a night replenishment, killing one and injuring four personnel.

25 Novembre 1985 - (incidente unità navale nucleare) Atlantic: The USS W.S. Sims (FF-1059) and USS Moosbrugger (DD-980) collide at sea in the Guantanamo Bay, Cuba, operating area.

10 Dicembre 1985 - (incidente unità navale nucleare) Pacific: The USS Lockwood (FF-1064) collides with the Philippine merchant ship Santo Nino while crossing the Uruga Suido outbound of traffic lanes at the entrance to Tokyo Bay, Japan. Damage includes a hole 15-feet wide and 12-feet deep running 25 feet down the starboard side, with three crew injuries. The Santo Nino suffers damage above the waterline.

31 Dicembre 1985 - (incidente unità navale nucleare) Atlantic: In 1985 the USS Forrestal (CV-59) is discovered to have a reduction gear problem unrelated to its Service Life Extension Program overhaul work (which finished 20 May). The defect forced the ship to return to her homeport of Mayport, Florida, with one propeller trailing to undergo repairs later in the year.

31 Dicembre 1985 - (incidente unità navale nucleare) Atlantic: The USS Narwhal (SSN-671) drifts for several hours in Palma Bay, Palma Majorca, Spain, after its mooring cable breaks on New Year's Eve.

Metà anni '80 - Scienziati sostengono che i test nucleari in Nevada (circa 240) potrebbero aver provocato negli USA 50.000 casi di cancro alla tiroide, dopo che le mucche da latte e bestiame da allevamento furono contaminati da Iodio radioattivo, passando la radiazione agli uomini attraverso latte e carne. Il governo britannico rivela di aver condotto esperimenti con radiazioni sulla propria popolazione per almeno 40 anni. Similmente come in America, ignari cittadini sono stati alimentati con cibo contaminato, intriso di isotopi. Anche in Australia centinaia di cittadini sono stati coinvolti in esperimenti radioattivi che dal dopoguerra sono proseguiti fino al 1960. Alcuni esperimenti comportavano l'iniezione di ferro radioattivo negli ovini che venivano in seguito uccisi e dati da mangiare a "volontari"; venne anche iniettato iodio radioattivo a 5 donne incinte per studiare il tracciato cardiaco

1986 - Kaifeng City, Cina: incidente da irradiazione Two individuals were accidentally exposed to a cobalt-60 source for about 3 minutes. They received whole body doses of 260 and 350 rads, respectively, and developed acute radiation sickness.

1986 - The U.S. government declassifies 19,000 pages of documents indicating that between 1946 and 1986, the Hanford Site in Richland, Washington, released thousands of US gallons (several m³) of radioactive liquids. Of 270,000 people living in the affected area, most received low doses of radiation from 131I.

1986 - Gran Bretagna: incidente radioterapico An operator was exposed to a cobalt-60 radiotherapy source while changing sources, resulting in a 1,500-rad dose to one hand. Reddening and blistering of the skin developed two weeks later.

6 Gennaio 1986 – Oklahoma (USA). Un operaio muore e altri 100 restano contaminati a seguito di un incidente che si sviluppa in una centrale atomica in Oklahoma, negli Stati Uniti.

13 Gennaio 1986 - (incidente unità navale nucleare) Pacific: A Japanese maritime patrol aircraft spots a Soviet Echo II class nuclear-powered cruise missile submarine under tow by a Soviet salvage ship about 280 miles north west of Okinawa in the East China Sea, heading northward. The submarine evidently suffered a propulsion casualty.

29 Gennaio 1986 - (incidente unità navale nucleare) Pacific: The USS Ingersoll (DD-990) makes a heavy landing against the Canadian tug Provider at Esquimalt, British Columbia. Responsibility is charged to an inexperienced tug operator and to brisk winds. Damage to both vessels is minimal.

10 Febbraio 1986 - (incidente unità navale nucleare) Pacific: The USS Willamette (AO-180) collides with the USS Jason(AR-8) 75 miles south west of Pearl Harbor, Hawaii, during a formation steaming exercise, killing one and injuring eight. The collision smashes the Willamette's starboard bow from the rail to below the waterline. A large vertical rupture from deck to waterline on the port side of the Jason forces the ship to be towed back to port.

13 Marzo 1986 - (incidente unità navale nucleare) Atlantic: The USS Nathanael Greene (SSBN-636) runs aground in the Irish Sea, suffering external damage to its ballast tanks and rudder. A spokesman for the U.S. Navy says "There was no effect on the propulsion, no injuries and no damage to the Poseidon nuclear missiles." The submarine initially sails to Holy Loch, Scotland, under its own power for emergency repairs. It then leaves Scotland on 25 April and travels submerged to Charleston, South Carolina. The extent of the damage subsequently leads to a decision to decommission the vessel, partly in order to satisfy SALT II limitations.

21 Marzo/11 Aprile 1986 - Tyler, Texas, USA: incidente radioterapico A defect in the computer program controlling the Therac-25 radiation therapy accelerator resulted in overexposures to two patients. One male patient was overexposed on 21 March, immediately experiencing pain from an estimated 16,500 to 25,000 rad localized dose. Various radiation injuries developed over the next few weeks and the patient died 5 months after the accident. The second patient, also male, received an overexposure to the face on 11 April which produced immediate skin burns. The patient eventually went into a coma and died 1 May of radiation injury to the brain and brain stem. An ETCC physicist eventually identified the nature of the software program that caused this and similar accidents with the Therac-25.

22 Marzo 1986 - (incidente unità navale nucleare) Pacific: The USS Secota (YTM-415) loses power and collides with the stern planes of the Trident submarine USS Georgia (SSBN-729) off Midway

Island in the Pacific and sinks, just after completing a personnel transfer. Ten crew are rescued, but two drown. The Georgia is undamaged.

23 Marzo 1986 - (incidente unità navale nucleare) Pacific: The USS Midway (CV-41) collides with a South Korean fishing boat in the Yellow Sea, damaging the boat but leaving the carrier unscathed.

4 Aprile 1986 - (incidente unità navale nucleare) Atlantic: The Royal Navy aircraft carrier HMS Illustrious suffers an explosion and severe gearbox fire, costing some four million pounds sterling in repairs.

4 Aprile 1986 - (incidente unità navale nucleare) Pacific: The USS William H. Standley (CG-32) suffers a main space fire in its Number 1 engine room during "Readiex 86-3" exercises, causing minor damage and no injuries. The Standley continues operations.

26 Aprile 1986 - Chernobyl (Ucraina) (scala Ines 7). L'incidente nucleare in assoluto più grave di cui si abbia notizia. Il surriscaldamento provoca la fusione del nucleo del reattore e l'esplosione del vapore radioattivo, che sotto forma di una nube pari a un miliardo di miliardi di Becquerel si disperde nell'aria. Centinaia di migliaia di persone, soprattutto nella vicina Bielorussia, sono costrette a lasciare i territori contaminati. L'intera Europa viene esposta alla nube radioattiva e per milioni di cittadini europei aumenta il rischio di contrarre tumori e leucemia. Non esistono ancora oggi dati definitivi sulle migliaia di vittime ricollegabili alla tragedia. The Chernobyl nuclear power station included four RBMK-1000 reactors at a site 3 km from Prypyat (pop. 45,000) and 15 km from Chernobyl (pop. 12,500). The RBMK-1000 reactor is a graphite-moderated, water-cooled reactor producing 1 MW of power. The design lacks a Western-style containment vessel, instead being based on older Soviet designs optimized for production of plutonium. Unit 4 (housed in the same building as Unit 3) was completed in December 1983 and fully brought on line in March 1984. The early commissioning had left several safety tests undone. In April 1986 Unit 4 was nearly through its first fuel cycle, with the result that a variety of fission products were built up in the core.

On 25 and 26 April 1986 operators were attempting to perform safety tests. On the morning of 26 April they circumvented safety systems to conduct a test at 1:23 AM. The test resulted in a power excursion; without a rapid ability to reinsert control rods the reactor reached 100 times its design thermal output about 1:23:40 AM. A steam explosion at 1:24 AM lifted the 1000-ton upper reactor cover, allowing all the water in the core to escape. This was followed by a second explosion, possibly a hydrogen explosion fueled by reaction of steam from ruptured pipes with zirconium and/or graphite in the reactor core. The second explosion ruptured the roof of the reactor building and expelled about 25% of the reactor core within and beyond the building. One person above the reactor was killed instantly by the explosions. A second person in the reactor building was severely burned by steam; he was found partly buried by debris and died within a few hours. Burning graphite and hot core material ejected by the explosions started about 30 fires, including some on the combustible tar roof of Unit 3. Many plant workers displayed symptoms of radiation sickness within hours of the explosion. In addition to plant workers, firefighters were also exposed significantly while successfully extinguishing fires started on the roof of Unit 3. Total number of people hospitalized was 108 by 6:00 AM and 132 by the end of the first day. Air flow in the damaged reactor building fed a fire in the graphite in the core. About 12 megacuries of radioactivity was released on the first day. Over the following days, attempts to extinguish the fire by dropping material onto the reactor core through the ruptured roof tended to insulate the core, allowing temperatures and emissions to increase after 31 April. The fire was extinguished on 6 May after about 40 megacuries had been released by the fire (in addition to releases on 26 April).

Three individuals died of non-radiation effects: the two killed on 26 April and a third who died of a heart attack. Another 28 individuals (6 firefighters and 22 power plant workers) died of acute

radiation sickness, and 238 others survived with acute radiation sickness. Of 22 exposed to 600 to 1,600 rad, 20 died of radiation (one additional death may be due to heart attack associated with the accident); two of these deaths were individuals with total body thermal burns. Survival times for these 20 radiation deaths were 10, 14, 14, 14, 15, 17, 17, 18, 18, 18, 20, 21, 23, 24, 24, 25, 30, 48, 86, and 91 days. Exposures ranging from 400 to 600 rad occurred for 23 individuals, of whom 7 died, all of whom had severe beta burns (covering at least 30% of the body). Survival times for these seven were 16, 18, 21, 23, 32, 34, and 48 days. Exposures of 200 to 400 rad were incurred by 53 individuals, one of whom died 96 days after the accident. Some deaths involved complications of emergency transplants; 13 bone marrow transplants and 6 human embryo liver transplants were performed in the weeks following the accident. Survivors with radiation sickness included about 31 with beta radiation burns. In these cases burns developed one to three weeks after exposure over 1 to 30% or more of the body. A total of about 710 plant workers and emergency workers received doses over 50 rad. Workers who received doses between 25 and 50 rad during response or recovery operations include about 60 workers during the accident, about 2,900 workers during recovery through 1987, and about 16,000 military servicemen. Evacuation of residents under the plume was delayed by the government's unwillingness to publically acknowledge the accident. Throughout Europe many abortions of normal pregnancies were obtained out of fears of radiation from Chernobyl; studies suggest about 100 excess abortions in Italy and 400 excess abortions in Denmark in the months following the accident. Over the following years the principal observed chronic affect has been a significant increase in childhood thyroid cancer, affecting 700-1400 children with 10 deaths reported; these figures are far above background rates, whereas other cancers are not significantly different than background levels.

29 Aprile 1986 - (incidente unità navale nucleare) Atlantic: The USS Atlanta (SSN-712) runs aground in the Strait of Gibraltar, damaging sonar gear and puncturing a ballast tank in the bow section. Navy officials stress that no radiation leaked from the nuclear reactor and no crewmembers were injured. The vessel limps to Gibraltar for repairs, with water entering through holes in the ballast tank.

4 Maggio 1986 - Hamm-Uentrop, Germania: un esperimento in un impianto da 300 megawatt THRT-300 PBMR (reattore a letto di sfere) nella Germania Ovest causa la fuoriuscita di materiale radioattivo dopo che uno dei letti di sfere viene immerso nel condotto utilizzato per portare carburante al reattore. Il tentativo di rimuovere l'ostruzione creatasi danneggia il condotto e causa il rilascio di radionuclidi. Radiazioni sono misurate per circa due chilometri intorno al reattore.

14 Maggio 1986 - (incidente unità navale nucleare) Atlantic: The Soviet Navy logistic support ship Berezina collides with the Soviet ship Capitan Soroka while proceeding into the Mediterranean near Istanbul, Turkey. The Berezina receives abraded hull to the waterline on the port side.

2 Luglio 1986 - (incidente unità navale nucleare) Pacific: The USS Roanoke (AOR-7) collides with the Liberian oil tanker Mint Prosperity while steaming into Long Beach, California, in low visibility. The Roanoke sustains only minor damage to its bow and enters Naval Station Long Beach under its own power.

29 Luglio 1986 - (incidente unità navale nucleare) : A inquiry begins into a recent boiler fire aboard the Royal Navy frigate HMS Plymouth which killed one.

30 Luglio 1986 - (incidente unità navale nucleare) Atlantic: A U.S. Navy Sidewinder air-to-air missile hits the 30,000-ton tanker Western Sun carrying 26,000 barrels of oil 60 miles east of Norfolk, Virginia, leaving a reported two-to-three foot gash in the ship's superstructure. One report says the impact started several small fires. The Navy states that it was an inert missile used by an F-

14 Tomcat fighter in an exercise within a designated warning area, and that a notice to ships of the exercise had been sent on 24 July.

31 Luglio 1986 - (incidente unità navale nucleare) Pacific: In late July the USS Guitarro (SSN-665) reportedly suffers a minor mishap involving a shipboard valve while at sea. In response to inquiries the Navy says no serious equipment or safety problems occurred aboard the Guitarro.

13 Agosto 1986 - (incidente unità navale nucleare) Atlantic: The USS Inchon (LPH-12) suffers a casualty to the ship's evaporators while underway for Moorehead City, North Carolina, causing the ship to return to Norfolk, Virginia, for two days of repairs.

16 Agosto 1986 - (incidente unità navale nucleare) Pacific: A freak wave crashes over the USS Carl Vinson (CVN-70) injuring one man and sweeping seven others into the Pacific Ocean. They were quickly rescued.

9 Settembre 1986 - (incidente unità navale nucleare) Atlantic: A CH-46 Sea Knight helicopter crashes into a CH-53 Sea Stallion helicopter on the flight deck of the USS Saipan (LHA-2) while operating off northern Norway during "Northern Wedding" exercises. The Sea Knight flips into the water, killing nine.

22 Settembre 1986 - (incidente unità navale nucleare) Atlantic: The USS Yellowstone (AD-41) collides with the USS Truckee (T-AO-147) during underway replenishment off Virginia. The Truckee has minor superstructure damage, while the Yellowstone sustains a two-foot gash in the hull on the portside.

30 Settembre 1986 - Il caso Vanunu. A Roma viene arrestato dai servizi segreti israeliani, a Roma, il tecnico nucleare Mordechai Vanunu. Vanunu aveva lavorato, dall'agosto 1977 al novembre 1985, nell'impianto nucleare di Dimona nel deserto del Negev, nel sud di Israele, ufficialmente una centrale nucleare di ricerca fornita a Israele dalla Francia alla fine degli anni '50. Dopo una lunga crisi di coscienza ed una fase di crescente impegno politico pacifista negli anni dell'invasione israeliana del Libano, Vanunu lasciò il suo impiego ed intraprese un lungo viaggio all'estero (in Australia e negli USA). Nel settembre del 1986, egli decise di rivelare al "Sunday Times" di Londra tutte le informazioni in suo possesso sull'impianto di Dimona, comprese una sessantina di fotografie che aveva ripreso clandestinamente al suo interno. Sottoposte dal giornale all'esame di alcuni esperti autorevoli (Frank Barnaby e Theodor Taylor, entrambi in passato impegnati nella ricerca e sviluppo di armi nucleari britanniche ed americane), tali informazioni rivelarono che a Dimona, sotto il reattore, un grande edificio sotterraneo a sei piani conteneva tutti gli impianti necessari per "riprocessare" il materiale fissile, separare e purificare il plutonio e costruire ordigni nucleari. Secondo Vanunu, la produzione di plutonio sarebbe stata di circa 40 kg all'anno, parecchie volte superiore a quanto si supponeva in precedenza e sufficiente (secondo l'analisi condotta da Taylor sulle foto di componenti nucleari riprese dal tecnico) per produrre circa otto bombe l'anno. Israele avrebbe posseduto così un arsenale dell'ordine di 200 testate, una cifra significativamente più alta delle stime (50-100 testate) basate sulla potenza presunta del reattore di Dimona. Vanunu dichiarò inoltre che Israele produceva bombe a fusione, portando indizi convincenti sulla produzione a Dimona di componenti di deuterio di litio, un materiale tipico degli ordigni a fusione (si trattava probabilmente di bombe del tipo "boosted", in cui deuterio e trizio vengono posti al centro di una sfera di plutonio, aumentando così la potenza dell'esplosione fino ad alcune centinaia di kton). Nel marzo del 1988 vi fu il processo: un processo a porte chiuse, da cui fu escluso qualsiasi osservatore esterno, e durante il quale allo stesso Vanunu fu fisicamente impedito di parlare su argomenti "proibiti", che si concluse rapidamente con una condanna a 18 anni di reclusione per

spionaggio aggravato e tradimento in tempo di guerra. Due anni dopo, la condanna fu confermata in appello

3/6 Ottobre 1986 – Oceano Atlantico. In seguito ad un incendio il sottomarino K-219, classe OTAN Yankee, affonda nell'Atlantico con 34 testate nucleari a bordo a 644 km ad est delle Bermude. L'equipaggio, prima dell'affondamento del 6 Ottobre, riesce ad evitare la fusione del nocciolo che, in caso contrario, avrebbe potuto contaminare la costa Est degli Stati Uniti e del Canada. Il relitto a tutt'oggi contiene ancora il reattore nucleare.

3 Ottobre 1986 - (incidente unità navale nucleare) Atlantic: A Soviet Yankee I class nuclear-powered ballistic missile submarine suffers an explosion and fire in one of its missile tubes 480 miles east of Bermuda, killing at least three. General Secretary Gorbachev sends President Reagan a private communication regarding the accident in advance of the public announcement on 4 October, assuring him that there was no danger of nuclear explosion, radioactive contamination, or accidental launching of nuclear missiles. U.S. forces sampled the air and water around the submarine and detect no radioactivity. The submarine sinks under tow on 6 October in 18,000 feet of water about 600 miles north east of Bermuda. U.S. sources said that the explosion probably originated in the liquid fuel of one of the missiles.

26 Ottobre 1986 - Un marinaio della portaerei nucleare "US Oriskany", preso dal panico per l'accensione spontanea di un razzo illuminante, lo getta in un loculo che ne contiene altri 650. Il conseguente incendio, che causa la morte di 44 persone, distrugge sei aerei e si propaga nel bunker degli ordigni nucleari.

31 Ottobre 1986 - (incidente unità navale nucleare) Atlantic: In late October the USS Augusta (SSN-710) is damaged in an under sea collision while on a routine training patrol in the Atlantic. No crew members are injured and the submarine returns to Groton, Connecticut, for \$2.7 million worth of repairs by year's end. Reportedly, according to unnamed U.S. Defense Department sources, it is unclear whether the submarine struck the ocean floor or an underwater object, but there was no risk of the submarine sinking or danger to the nuclear reactor. A Defense Department spokesman refuses to comment on a CBS news report that the submarine "very possibly" collided with a Soviet submarine.

3 Novembre 1986 - (incidente unità navale nucleare) Pacific: The USS Towers (DDG-9) hits the wharf in the Port of Cairns in northern Queensland, Australia, damaging the wharf.

31 Dicembre 1986 - (incidente unità navale nucleare) Atlantic: During Fiscal Year 1986 the USS William V. Pratt (DDG-44) runs aground while going from Naval Station Charleston, South Carolina, to Naval Weapons Station Charleston, South Carolina, causing \$1.3 million damage to her sonar domes.

1987 - Zhengzhou City, Cina: incidente da irradiazione An accident occurred at an irradiation facility using a cobalt-60 source. An individual accidentally entered the irradiation room for 10 to 15 seconds, acquiring a whole-body dose of 135 rad in the process. The person suffered anorexia and nausea four hours later and developed radiation sickness with slow recovery.

1987 – USA. Una bomba di eco-terroristi esplode nel parcheggio dei Sandia National Laboratories

Gennaio 1987 - Gran Bretagna. Un camion blindato, carico di testate nucleari, finisce in una scarpata. A RAF nuclear weapon load carrier carrying two WE177 nuclear weapons, seeking to avoid a stationary private vehicle, left the road after skidding on ice and rolled on to its' side. A

second carrier, which was also carrying two weapons, skidded on the road and came to rest partly off the road. The containerised weapons were not damaged. Minor damage was caused to the first load carrier.

1 Gennaio 1987 - (incidente unità navale nucleare) Arctic: Sometime in the first half of January the Royal Navy nuclear-powered attack submarine HMS Splendid loses its towed array sonar system during a close encounter with a Soviet submarine in the Barents Sea off Murmansk. Reportedly the submarine was a Soviet Typhoon class nuclear-powered ballistic missile submarine. It is unclear whether the Soviet submarine severed the Splendid's tow-line accidentally or deliberately in an effort to obtain the sensitive technology. The submarine returns to Devonport, U.K., on 31 January.

13 Gennaio 1987 - (incidente unità navale nucleare) Pacific: The USS Berkeley (DDG-15) suffers a casualty to the forward sonar dome pressurization system, forcing the ship to reduce speed to 10 knots in heavy seas, and necessitating an unexpected stop in Guam to ascertain the level of damage and make temporary repairs.

14 Gennaio 1987 - (incidente unità navale nucleare) Pacific: The USS William H. Standley (CG-32) sustains minor damage when several ammunition barges which had been secured along side begin to break loose and pound the sides of the ship in heavy winds and high seas while the ship is anchored in San Francisco Bay, California. The barges are promptly secured, preventing significant damage or their becoming a drift in a crowded waterway.

17 Gennaio 1987 - Yakima, Washington, USA: incidente radioterapico A defect in the computer program controlling the Therac-25 radiation therapy accelerator resulted in overexposures to patients. A male patient was overexposed (estimated dose 8000-10000 rads localized), immediately reporting pain and developing skin burns later that day. The patient, although previously suffering from terminal cancer, died in April of complications related to the overexposure.

22 Gennaio 1987 - (incidente unità navale nucleare) : The USS Ogden (LPD-5) suffers a Class Charlie fire.

18 Febbraio 1987 - (incidente unità navale nucleare) Atlantic: The Irish trawler Summer Morn is dragged backward for 10 to 20 miles for two and one half hours by a U.S. nuclear-powered submarine before it cuts its nets to free the submarine about 14 miles northwest of the Isle of Man in the Irish Sea. The trawler hauls in a submarine communications buoy stuck in its nets. The U.S. Defense Department confirms the submarine was American, but declines to say which submarine it was.

7 Aprile 1987 - (incidente unità navale nucleare) Atlantic: Two sailors are swept from the deck of the USS Ulysses S. Grant (SSBN-631) in rough seas three miles outside of the Portsmouth, New Hampshire, harbor; one is rescued but is pronounced dead and the other is lost at sea.

21 Aprile 1987 - (incidente unità navale nucleare) Atlantic: The USS Richard L. Page (FFG-5) collides with and sinks the disabled fishing vessel Chickadee, which was under tow by another fishing boat, during a high-speed run in heavy fog off Virginia. The incident leads to calls for more drug testing of sailors, though no use on the Richard L. Page is ever uncovered.

25 Aprile 1987 - (incidente unità navale nucleare) Atlantic: The USS Daniel Boone (SSBN-629) goes aground in the St. James River at Newport News, Virginia, during sea trials following a \$115 million dollar overhaul. The grounding delays the ship's return to service.

29 Aprile 1987 - (incidente unità navale nucleare) Atlantic: The USS La Moure County (LST-1194) collides with the USS Hermitage (LSD-34) about 300 miles off the Georgia coast while the ships are practicing a resupply exercise. The Hermitage sustains a five-foot hole in its bow stem above the waterline while the LaMoure County sustains superficial damage to its left side. The commanding officer of the La Moure County is relieved pending an investigation of the accident.

27 Maggio 1987 - (incidente unità navale nucleare) : The USS Belleau Wood (LHA-3) suffers casualties to both boilers' super heater tubes.

3 Giugno 1987 - (incidente unità navale nucleare) Atlantic: The USS Patterson (FF-1061) returns to sea after suffering several small fires from efforts to restart a faulty generator while the ship is conducting drills in the Caribbean. The ship was towed to the Roosevelt Roads naval station, Puerto Rico, for one day of repairs. There were no injuries and no damage to the ship.

15 Giugno 1987 - (incidente unità navale nucleare) Atlantic: The West German supply vessel Neckar is struck by 46 mm anti-missile and anti-ship gun shells reportedly fired from a Polish vessel while observing a Warsaw Pact exercise in the Bay of Gdansk, about 375 miles east of Kiel. Four shells strike the Neckar's starboard side and one lodges near its rear engine room. The ship springs a leak and fire breaks out, but damage is only minor. A West German Defense Ministry spokesman says "there are indications pointing to technical or human failure... There is no reason to think it was done deliberately."

25 Giugno 1987 - (incidente unità navale nucleare) Pacific: The Royal Australian Navy ship Parramatta hits the wharf at the Port of Cairns, northern Queensland, Australia, damaging the wharf.

30 Giugno 1987 - (incidente unità navale nucleare) Pacific: In late June or early July, the Trident submarine USS Nevada (SSBN-733) suffers a breakdown while conducting routine operations following the improper installation of a power transmission gear during a recent February to April maintenance stop at the Newport News shipyard, Virginia. The damage is estimated at several million dollars, and causes the Nevada to cancel a special call at its new home port of Bangor, Washington. In response to queries the Navy says "The safety of the ship and crew was never an issue and the ship is continuing its operations."

Luglio/Settembre 1987 - Koko, Nigeria: esposizione radiologica ad un basso livello di scorie A foreign company dumped chemical wastes at the Koko port in Nigeria, some of which contained radioactive materials. Examination showed 26 workers who handled the wastes suffered chemical injuries along with slight injuries attributable to radiation exposure.

27 Luglio 1987 - (incidente unità navale nucleare) Pacific: U.S. Navy planes conducting bombing practice at night near Okinawa hit the Malaysian freighter Pomex Saga, injuring one.

15 Agosto 1987 - (incidente unità navale nucleare) Pacific: The Royal Australian Navy convenes a board of inquiry to discover why the diesel submarine Otama submerged during exercises off New South Wales, Australia, while two submariners were working outside the pressure hull. Both men were killed.

26 Agosto 1987 - (incidente unità navale nucleare) Atlantic: The Royal Navy nuclear-powered attack submarine HMS Conqueror suffers a fire while at Devonport, U.K., for a four-month overhaul, damaging its engine room. The British Navy stresses that the fire was far from the submarine's nuclear reactors.

12/29 Settembre 1987 - Goiania, Goias, Brasile: dispersione accidentale di fonte radiografica compromessa con dispersione di polvere di cesio 137 in un'ampia area urbana con gravi conseguenze per i residenti. un apparecchio di radioterapia, abbandonato in un vecchio ospedale, viene recuperato da robivecchi per la vendita a peso. Il Cesio 137, prodotto attivo dell'apparecchio, si disperde. La gente vi gioca, attirata dal colore blu che emette. 122.800 persone vengono sottoposte a controllo, almeno 4 persone muoiono entro 75 giorni dal ritrovamento più un bambino di 6 anni contaminato con 5,2 mCi, 249 presentano importanti contaminazioni, 120 vengono irradiate, 129 irradiate e contaminate, 49 vengono ospedalizzate (di cui 21 in reparti di cure intensive), 28 casi di ustione, 14 trapianti di midollo e 600 persone, nel 2003, sono ancora sotto sorveglianza medica (livello 5, scala INES) A radiotherapy unit had been abandoned in a clinic which was being demolished. The unit had a source consisted of 1,375 curies of cesium-137 in the form of cesium chloride salt, sealed within two nested stainless steel containers to form a 5-cm diameter capsule. Two individuals, R.A. and W.P., dismantled the unit and extracted the source, taking it to the home of R.A. Both began vomiting on 13 September; W.P. sought medical treatment on 15 September and was advised to stay home. R.A. opened the source outside his home on 18 September. The unit material was sold to a junkyard owned by D.F., who noticed a blue glow from the source container that night; he and his wife M.F. examined the material closely, also inviting a number of people to view the capsule. On 21 September the source material was removed and distributed among several people, some of whom spread it on their skin. Also that day M.F. became ill and was cared for by her mother M.A., who took contamination to her home on leaving on 23 September. Around 23 September junkyard employees I.S. and A.S. were exposed while further dismantling parts of the unit. D.F.'s brother I.F. took some source material home on 24 September and set it on a table during a meal; several family members, including his 6-year-old daughter L.F., handled the material while eating. On 25 September D.F. sold some unit components to a second junkyard.

With many people ill by 28 September, M.F., assisted by G.S., took the material along with some components recovered from the second junkyard and transported it on a bus to a hospital where she placed it on the desk of Dr. P.M. and stated it was "killing her family." Doctors initially suspected a tropical disease, but one suspected radiation injury. The morning of 29 September a medical physicist, W. F., was contacted; his arrival was delayed because he doubted the readings of his first radiation monitor, but arrived in time to prevent the fire department from throwing the source into a river. The afternoon of 29 September the authorities were alerted and began response, including identification of contaminated areas and treatment of injured people in facilities set up in the city's Olympic stadium. About 112,800 people were examined at the stadium of whom 129 were found to be contaminated; 20 were hospitalized.

By 3 October some injured people had been sent to Rio de Janeiro for treatment, while others were treated in a special wing of the Goiania General Hospital. Four people died in the acute phase: M.F. and L. F. died 23 October, with respective doses of 570 and 600 rad, respectively; I.S. died 27 October (dose 450 rad); A.S. died 28 October (dose 530 rad). A fifth person, D. F. (dose 700 rad) was hospitalized in May 1994 and subsequently died of liver failure related to his radiation injury. Others exposed included M.A. (430 rad), G.S. (300 rad), and Dr. P.M. (130 rad). W.P. suffered radiation injury to his hand, and R.A. and W.P. both suffered radiation sickness. In addition to the five who died, 23 suffered localized radiation burns, several requiring amputation of fingers. The 23 injured survivors included 9 showing bone marrow depression of whom 3 displayed acute radiation sickness. During hospitalization many patients suffered depression and other emotional problems.

21 Settembre 1987 - Sardegna, Italia. Affonda, nei pressi di Capo Spartivento, la nave RIGEL sospettata di trasportare scorie di uranio.

1 Ottobre 1987 - (incidente unità navale nucleare) Atlantic: The Royal Navy nuclear-powered ballistic missile submarine HMS Renown suffers a leak of reactor coolant during tests in the reactor compartment while at the Rosyth naval base, Scotland, for a refit. The Navy says it was a minor incident, "without any radiation hazard."

9 Novembre 1987 - (incidente unità navale nucleare) Atlantic: The Irish County Down trawler Angary is pulled along for a few seconds until its tackle snaps off at deck level, breaking as teal chain tested at 32 tons of stress, and disappears without a trace about 17 miles north of the Isle of Man in the Irish Sea. The fishermen suspect a submarine is responsible, but the U.K. Ministry of Defense says no British submarine was operating in the vicinity.

17 Novembre 1987 - Iran. Caccia iracheni conducono un raid aereo sulla centrale iraniana di Bushehr

28 Novembre 1987 - California, USA: Bomb exploded at 1:30 A.M. in parking lot of Sandia National Laboratories (next to LLNL); 32 hours later a caller claimed responsibility for the Nuclear Liberation Front, although link was unconfirmed.

Dicembre 1987 - Coulport, Gran Bretagna (informazione tratta dall'Oxburg report, 1992, Gran Bretagna). Human error on the part of a crane driver following the development of a defect on a crane led to a missile colliding with trailer supports. There was no damage to any nuclear weapon.

1 Dicembre 1987 - (incidente unità navale nucleare) Atlantic: In December the West German Navy destroyer Moelders suffers a major fire while in the English Channel, returning from the Mediterranean. The fire originates in the galley and produces heavy, poisonous smoke which spreads through vents and cable conduits to a number of decks and compartments. It burns for several hours before being brought under control with the assistance of the frigate Niedersachsen which then tows the ship to its homeport of Wilhelmshaven.

17 Dicembre 1987 - Biblis, Germania. Incidente a livello 2 della scala INES. Rivelato solo un anno dopo in un articolo della rivista specializzata americana, Nucleonic Weeks

Dopo il 1987 - Pennsylvania: Mentally ill man drives his station wagon through the fence at Three Mile Island nuclear power plant and wanders on foot for a period of time before being captured

1988 - In extremis un missile sovietico contenente materiale radioattivo viene spostato su un'orbita più elevata per non correre il rischio di cadere sulla terra

1988 - Zhao Xian, Cina: incidente da irradiazione An accident occurred at an irradiation facility which used a cobalt-60 source. An individual accidentally entered the irradiation room for about 40 seconds, resulting in a whole body dose of about 520 rad. The individual suffered acute radiation sickness, recovered, and was still alive three years later.

1988 - Exeter, Gran Bretagna: incidente radioterapico Due to a calibration error with a radiotherapy unit, 205 patients received significant overdoses.

1988 - Olanda: infiltrazione in uno dei reattori della stazione nucleare di Dodewaard

1988 - Spagna: problema tecnico nello stabilimento di Almaraz

1988 - Spagna: incendio nella stazione di Valdellos

26 Gennaio 1988 - (incidente unità navale nucleare) Atlantic: The Royal Navy nuclear-powered ballistic missile submarine HMS Resolution suffers an electrical malfunction while docked in Faslane, Scotland. The Observer newspaper claims that the malfunction shuts down the primary coolant pumps, almost leading to a core meltdown. And, that a crew member who was exposed to radiation had to be scrubbed down for 24 hours. The Ministry of Defense denies these stories, saying the submarine suffered a "minor electrical malfunction;" those that said the submarine's reactor could have melted down didn't know what they " are talking about;" and there had been "absolutely no danger to the crew or the general public."

12 Febbraio 1988 - (incidente unità navale nucleare) Atlantic: The USS Yorktown (CG-48) and USS Caron (DD-970) are bumped by a Soviet destroyer and frigate, respectively, nine miles off the coast of the Crimean Peninsula in the Black Sea. The action came after the two U.S. ships entered the Soviet's 12-mile territorial water limit.

6 Febbraio 1988 - (incidente unità navale nucleare) Atlantic: A West German diesel submarine collides with a Norwegian oil platform in the North Sea while taking part in an antisubmarine warfare exercise. The submarine collided with the anchor chain of the oil rig Oseberg B, and while trying get loose struck the rig at 30 meters. The submarine manages to surface in about an hour and proceeds to Bergen, Norway, for inspection and repair.

24 Aprile 1988 - (incidente unità navale nucleare) Atlantic: The USS Bonefish (SS-582) suffers explosions and fire in its battery compartment during operations with the USS John F. Kennedy (CV-67) and the USS Carr (FFG-52) in the Caribbean, killing three. Submarine experts say that the most likely cause was the accumulation of hydrogen gas while the batteries were being recharged, which probably was ignited by a spark.

29 Aprile 1988 - (incidente unità navale nucleare) Pacific: The USS Sam Houston (SSN-609) runs aground in Carr Inlet off the south east tip of Fox Island in Puget Sound, Washington, while operating in shallow water to determine how quiet the vessel is in water. The submarine is freed the next day by four tugs and the USS Florikan (ASR-9) while the submarine's 142-man crew remains aboard. The submarine suffers minor damage to exterior hull equipment.

17 Maggio 1988 - (incidente unità navale nucleare) Atlantic: The Royal Navy nuclear-powered attack submarine HMS Conqueror suffers a fire while docked in Gibraltar. The flames are quickly put out and do not affect the nuclear reactor.

1 Giugno 1988 - (incidente unità navale nucleare) Atlantic: In the first week of June the Royal Navy nuclear-powered attack submarine HMS Conqueror is accidentally hit by an unarmed training torpedo dropped by an antisubmarine warfare helicopter during exercises off the west coast of Scotland. The deck plating of the submarine is bent on impact and the submarine proceeds to the Faslane submarine base, Scotland, for repairs.

18 Giugno 1988 - (incidente unità navale nucleare) Atlantic: In mid-June the trawler Strantail has its nets torn to shreds by a submarine 18 miles north of Tory Island, Ireland. The submarine which

bore no identification markings surfaced near the trawler and cleared itself of the remnants of the nets.

2 Luglio 1988 - (incidente unità navale nucleare) Atlantic: The Royal Navy nuclear-powered attack submarine HMS Courageous collides with and sinks the privately chartered yacht Dalriada at night in the North Channel of the Irish Sea. The four persons on board the yacht are rescued by the Royal Navy frigate HMS Battleaxe 35 minutes later.

16 Luglio 1988 - (incidente unità navale nucleare) Atlantic: The 78-foot racing yacht Drum collides with the partially surfaced Royal Navy diesel submarine HMS Otus in the middle of the night as it makes its way around the Mull of Kintyre off the west coast of Scotland. The Drum suffers a serious gash on the port side, but is able to make it to Crinan, Scotland, at reduced speed. The Otus comes on the radio 20 minutes after the incident offering assistance.

17 Luglio 1988 - (incidente unità navale nucleare) Atlantic: A French navy Super Etendard fighter crashes into the French aircraft carrier Clemenceau during a night landing off of Djibouti, killing the pilot.

23 Luglio 1988 - (incidente unità navale nucleare) Atlantic: The Japanese Defense Force diesel submarine Nadashio collides with the Japanese sport fishing boat Fuji Maru in Tokyo Bay, sinking the boat, killing 30 and causing a political furor over the submarine's lack of efforts to save drowning seamen. 23 Luglio 1988 - Giappone. Il sottomarino nucleare giapponese "Nadashio" entra in collisione con un peschereccio che affonda: trenta morti

Agosto 1988 - Al largo di Hong Kong (informazione tratta dall'Oxburg report, 1992, Gran Bretagna). Minor collision of a non-UK vessel which a moored UK vessel which was carrying nuclear weapons. There was no damage to any nuclear weapon.

2 Agosto 1988 - (incidente unità navale nucleare) Pacific: The USS Constellation (CV-64) suffers an engine room fire which forces the carrier to cancel scheduled operations and return to port in San Diego, California. The fire, believed caused by a fuel oil leak, begins with an explosion in one of the ship's four engine rooms around noon and is finally extinguished about nine hours later after several subsequent explosions caused by heat from the initial fire. Twenty sailors suffer burns, bruises, and smoke inhalation.

28 Agosto 1988 - (incidente unità navale nucleare) Pacific: A Japanese freighter collides with a Peruvian navy diesel submarine off Peru, sinking the submarine and killing seven. Agosto 1988 - Pacifico Giapponese. Il sommergibile nucleare peruviano "Pacocha" urta un peschereccio giapponese nel Pacifico e affonda: sette morti

29 Agosto 1988 - (incidente unità navale nucleare) Atlantic: The USS Dwight D. Eisenhower (CVN-69) collides with an anchored coal ship in Hampton Roads, Virginia, while entering the harbor to dock at Norfolk Naval Station, when wind and current push the carrier off course. Damage is minor to both ships.

Settembre 1988 - Somerset, Gran Bretagna (informazione tratta dall'Oxburg report, 1992, Gran Bretagna). A road traffic accident involving an unloaded nuclear weapon convoy. There was no damage to any nuclear weapon.

1 Settembre 1988 - (incidente unità navale nucleare) Indian: In September the Royal Navy destroyer HMS Southhampton collides with the container vessel Torbay 70 kilometers north of the United Arab Emirates, injuring three aboard the destroyer.

3 Settembre 1988 - (incidente unità navale nucleare) Pacific: The USS Berkeley (DDG-15) strikes the civilian tour boat Coralita while trying to dock in Cairns Harbor, northern Queensland, Australia, causing considerable internal damage to the Coralita.

12 Settembre 1988 - (incidente unità navale nucleare) Atlantic : The Royal Navy frigate HMS Penelope collides with the Canadian naval support ship Preserver while participating in the NATO "Teamwork 88" exercise, suffering considerable damage.

12 Settembre 1988 - (incidente unità navale nucleare) Atlantic : The USS Boulder (LST-1190) runs aground off Norway during the NATO "Teamwork 88" exercise due to bad weather or uncharted underwater obstructions, causing some major scrapes and tears in the bottom of the hull.

15 Settembre 1988 - (incidente unità navale nucleare) Atlantic : In mid September a Canadian naval ship goes aground off Norway during the NATO "Teamwork 88" exercise due to bad weather or uncharted underwater obstructions.

22 Settembre 1988 - (incidente unità navale nucleare) Atlantic : An Exocet missile accidentally drops from the Royal Navy fleet auxiliary ship HMS Regent on to a barge as it is being unloaded in Plymouth Sound, U.K., almost hitting two men in the barge.

Ottobre 1988 - Rocky Flats, Colorado, USA. At the nuclear trigger assembly facility at Rocky Flats in Colorado, two employees and a D.O.E. inspector inhale radioactive particles, causing closure of the plant. Several safety violations were cited, including uncalibrated monitors, inadequate fire equipment, and groundwater contaminated with radioactivity.

23 Ottobre 1988 - (incidente unità navale nucleare) Atlantic : The USS Hayler (DD-997) collides with the West German Navy replenishment tanker Rhon while exercising in the North Sea. Both vessels take on water. The Hayler receives a gash on her starboard side and proceeds to Rosyth, Scotland, for emergency repairs.

1 Novembre 1988 - (incidente unità navale nucleare) Arctic: In November, according to a Soviet press account, the Soviet nuclear-powered icebreaker Rossia almost suffers a nuclear reactor meltdown when cooling fluid is accidentally released while the ship is in Murmansk. Emergency procedures prevent the core from overheating, averting a possible major accident.

5 Novembre 1988 - Mururoa. La Francia realizza nelle acque dell'atollo di Mururoa un'esplosione nucleare di 50 chilotoni. Il giorno successivo, un violento terremoto (7,6 Richter) sconvolge la provincia cinese dello Yunnan, facendo circa 600 vittime.

9 Novembre 1988 - (incidente unità navale nucleare) Pacific: The USS Towers (DDG-9) narrowly misses a Japanese helicopter patrol boat with a volley of exercise shells, while exercising off the Boso Peninsula south east of Tokyo Bay, resulting in a political incident with the Japanese.

23 Novembre 1988 - La Maddalena, Italia. Un fonogramma della USL n°1 di Sassari annuncia l'allarme nucleare a La Maddalena. La rete di rilevamento locale avrebbe registrato un salto di quattro punti di radioattività. Si appura immediatamente che si tratta di un falso allarme dovuto al

sistema di rilevamento andato in "tilt". Il fisico Prof. Ladu dichiara inaffidabile il sistema di sorveglianza e di allarme in servizio nell'arcipelago maddalenino.

26 Novembre 1988 - La Francia realizza nelle acque dell'atollo di Mururoa un'esplosione nucleare di 50 chilotoni. Un terremoto (6 Richter) colpisce il Canada e gli Stati Uniti del Nord-Est il giorno seguente

30 Novembre 1988 - (incidente unità navale nucleare) Indian: A 20 mm cannon on an A-7 Corsair aircraft accidentally fires during maintenance setting six other aircraft ablaze aboard the USS Nimitz (CVN-68), operating in the Arabian Sea, killing one. The Nimitz continues operations.

6 Dicembre 1988 - (incidente unità navale nucleare) Atlantic: The Royal Navy diesel submarine HMS Ocelot is reported to return to the Clyde, Scotland, with a forward sonar dome ripped open. The Ministry of Defense denies the tearing is caused by a fishing trawl or cable, saying it was done by wave damage.

7 Dicembre 1988 -Circolo polare artico. L'URSS fa detonare una bomba nucleare di potenza stimata fra i 20 ed i 150 chilotoni in una base del circolo polare artico. Il 7 dicembre, l'Armenia è squassata da un terremoto (6,9 Richter) che uccide 60.000 persone e lascia mezzo milione di senzatetto.

11 Dicembre 1988 - (incidente unità navale nucleare) Pacific: A U.S. F/A-18 Hornet aircraft from the USS Constellation (CV-64) accidentally strikes an Indian merchant ship with a unarmed Harpoon missile during training operations about 200 miles north west of Honolulu, Hawaii, killing one. The missile confused a target hulk with the merchant ship which was in the exercise area.

1989 - Mondo: almeno 25 incendi sono scoppiati a bordo di sottomarini nucleari nel mondo

1989 - Finlandia: avaria al sistema di controllo nella stazione di Olkiluoto

1989 - Beijing, Cina -incidente da irradiazione Two individuals were accidentally exposed to a cobalt-60 source for about 4 minutes. They received whole-body doses of 87 and 61 rads, respectively, and suffered mild haemopoietic radiation sickness, from which they both recovered.

1989 - Cina: incidente radiografico An individual was accidentally exposed to an iridium-192 radiography source, resulting in localized exposures of 1,837 rad.

3 Gennaio 1989 - (incidente unità navale nucleare) Atlantic: The USS Will Rogers (SSBN-659) surfaces under the U.K. fishing vessel New Dawn in the Firth of Clyde off the coast of Scotland. The New Dawn sustains major damage to her hull. No injuries are reported.

17 Gennaio 1989 - (incidente unità navale nucleare) Atlantic: The USS Norfolk (SSN-714) collides with the USS San Diego (AFS-6) on the surface near the Chesapeake Bay Bridge-Tunnel near Norfolk, Virginia, as both ships are heading out to sea, causing minor damage and no injuries.

18 Gennaio 1989 - (incidente unità navale nucleare) Pacific: Accidental discharge of a fire fighting foam system during routine maintenance aboard the USS Belleau Wood (LHA-3) injures six crew members while the ship is operating in the mid-Pacific Ocean during a six month deployment.

22 Gennaio 1989 - Kazakistan. Una esplosione sperimentale (20-150 chilotoni) viene effettuata nel Kazakistan nordorientale; il giorno successivo un terremoto nel Tajikistan sovietico fa più di 200 morti.

25 Gennaio 1989 - (incidente unità navale nucleare) Atlantic: The USS Spruance (DD-963) runs aground near Andros Island in the Bahamas while fighting heavy winds. No injuries are reported but the ship requires \$1.4 million in repairs.

27 Gennaio 1989 - (incidente unità navale nucleare) Atlantic: The Royal Netherlands Navy diesel submarine Zeeleeuw collides with a buoy while departing the Den Helder Naval Base in the Netherlands. The vessel had been involved in sea trials.

30 Gennaio 1989 - (incidente unità navale nucleare) Atlantic: A sailor aboard the USS Detroit (AOE-4) is scalded to death when steam is accidentally sent into a boiler he was sent to clean. The ship is docked at the Norfolk Naval Station, Virginia.

5 Febbraio 1989 - San Salvador, El Salvador: incidente da irradiazione An accident occurred during repairs at a medical sterilizer irradiation facility with a cobalt-60 source. One component of the radiation source fell out of the source rack, leaving it exposed in the irradiation room at a time when radiation monitors were disabled. Several workers entering the room received radiation exposures. One person received an 800 rem dose, causing death, and two others received severe injury from radiation, one receiving 290-370 rem.

Aprile 1989 - Norvegia. Un sottomarino nucleare sovietico prende fuoco al largo della costa settentrionale della Norvegia: nel rogo muoiono 42 persone

4 Aprile 1989 - (incidente unità navale nucleare) Atlantic: The Danish fishing boat Christin-Michelle is nearly over turned by a submarine ensnared in its trawl. The submarine, which does not offer assistance, is presumed to be a Soviet Whiskey class diesel-powered attack submarine seen operating south-south east of Bornholm off the coast of Denmark.

7 Aprile 1989 - (incidente unità navale nucleare) Arctic: A Soviet Mike class nuclear-powered attack submarine sinks in 8,400 feet of water 270 miles north of the Norwegian coast after a fire on board could not be contained. Forty-two crewmembers are killed. Also lost are the submarine's single nuclear reactor and two nuclear-armed torpedoes.

11 Aprile 1989 - (incidente unità navale nucleare) Atlantic: Two Syrian helicopters mistakenly attack a Soviet naval diving tender being towed by a Soviet tug boat with anti-tank missiles some 37 miles from the Syrian port of Tartus. Seven sailors are injured.

17 Aprile 1989 - (incidente unità navale nucleare) Atlantic: The British fishing vessel Laurel is forced to cut her fishing nets after being towed by an unidentified U.S. nuclear-powered submarine for 15 minutes in the Irish Sea off the coast of the Isle of Man.

19 Aprile 1989 - (incidente unità navale nucleare) Atlantic: An explosion in the number two gun turret kills 47 sailors aboard the USS Iowa (BB-61) during gunnery practice off the coast of Puerto Rico.

19 Aprile 1989 - (incidente unità navale nucleare) Atlantic: The USS Trippe (FF-1075) and the USS Platte (AO-186) collide during fleet exercises in the Atlantic, 500 miles east of Jacksonville, Florida. One minor injury is reported and the Platte sustains minor damages.

1 Maggio 1989 - (incidente unità navale nucleare) Pacific: A wave washes three sailors from the deck of the USS Barbel (SS-580) as it conducts surface operations off the coast of the Japanese island of Kyushu. Two of the sailors drown and the third is rescued.

1 Maggio 1989 - (incidente unità navale nucleare) Pacific: In May, a broken valve causes the USS Houston (SSN-713) to plunge nose down.

6 Maggio 1989 - Greenpeace e l'Università di Bologna presentano un dossier che documenta 1.276 incidenti a sommergibili e navi militari. I dati, attinti direttamente dalla documentazione del Congresso Usa. riferita al periodo compreso tra il 10 aprile 1963 e il 30 ottobre 1986, rilevano gli incidenti gravi a sottomarini nucleari: 7 sovietici, 7 statunitensi, 4 francesi, 3 britannici. In 5 casi l'incidente si è concluso con l'affondamento. Negli altri casi si sono verificati incendi, esplosioni e inquinamento radioattivo dei mari. Dall'inchiesta risultano 50 atomiche finite in fondo al mare. Costituisce un serio allarme per le istituzioni democratiche e per la popolazione constatare che nessuno di questi incidenti è stato rivelato al Parlamento ed alla pubblica opinione dal Governo o dalle autorità militari.

9 Maggio 1989 - (incidente unità navale nucleare) Pacific: Fire in the engine room of the USS White Plains (AFS-4) kills six sailors and injures five others while the ship is operating about 100 miles east of Hong Kong in the South China Sea. The ship is towed to Subic Bay, Philippines, for repairs.

13 Maggio 1989 - (incidente unità navale nucleare) Atlantic: A fire in the pump room of the USS America (CV-66) kills two sailors and causes minor damage while the ship is in the mid-Atlantic en route to the Mediterranean for a six-month deployment.

17 Maggio 1989 - (incidente unità navale nucleare) Pacific: The USS Helena (SSN-725) is towed nearly 1,000 miles from Midway Island to Pearl Harbor, Hawaii, after its reduction gear fails, rendering its propeller inoperable.

19 Maggio 1989 - (incidente unità navale nucleare) Pacific: Helicopters from the USS Belleau Wood (LHA-3) and the USS Duluth (LPD-6) are used to rescue fifty-two personnel thrown into the water when bad weather conditions cause their boats to overturn during the amphibious exercise "Valiant Usher '89" near Shoalwater Bay, Queensland, Australia. One U.S. Marine is drowned and two others are injured.

23 Maggio 1989 - (incidente unità navale nucleare) Pacific: The USS Gurnard (SSN-662) runs aground off the California coast near San Diego while submerged during a routine training mission. No injuries or damages are reported.

24 Maggio 1989 - (incidente unità navale nucleare) Atlantic: The French Navy diesel submarine La Praya is caught in the nets of a Norwegian fishing vessel in the North Sea off the Shetland Islands. The trawler severs its nets to free the submarine.

25 Maggio 1989 - (incidente unità navale nucleare) Pacific: Fire aboard the USS Blueback (SS-581) forces it to surface during training exercises off the coast of southern California. No injuries are reported and damage appears slight.

1 Giugno 1989 - (incidente unità navale nucleare) Pacific: The Canadian naval destroyer Kootenay collides with the Danish freighter Nordpol while steaming with its radar off during a Canadian/U.S.

anti-submarine warfare exercise about 28 miles north west of Cape Flattery, Washington. Both ships sustained damage above the waterline and three Kootenay crewmembers were injured.

14 Giugno 1989 - (incidente unità navale nucleare) Pacific: The USS Houston (SSN-713) accidentally snags a tow cable and sinks the tugboat Barcona south west of Long Beach, California. One tugboat crewmember is drowned. The Houston is in the area for the filming of the movie "The Hunt for Red October."

15 Giugno 1989 - (incidente unità navale nucleare) Atlantic: In mid-June a leak forces the Royal Navy diesel submarine Otus to surface off the coast of Madeira, Spain.

15 Giugno 1989 - (incidente unità navale nucleare) Pacific: In mid-June a fire aboard the USS Pelileu (LHA-5) at Long Beach, California injures 14 and causes minor damage.

16 Giugno 1989 - (incidente unità navale nucleare) Pacific: The USS Houston (SSN-713), en route to San Diego, California after participating in the filming of the "Hunt for Red October", becomes entangled in the net of the fishing boat Fortuna. No injuries are reported and damage to the net is estimated at \$2,000.

26 Giugno 1989 - (incidente unità navale nucleare) Arctic: A Soviet Echo II class nuclear-powered submarine surfaces in the Norwegian Sea billowing smoke after a leak in the pipes leading to its reactor's secondary cooling system forces the reactor to be shut down. It is later revealed that some crewmembers were treated for radiation exposure and that measurable amounts of radiation were released.

28 Giugno 1989 - (incidente unità navale nucleare) Atlantic: An unknown Royal Navy submarine is involved in an incident with the fishing vessel Huntress in the Clyde area of the Irish Sea.

28 Giugno 1989 - (incidente unità navale nucleare) Atlantic: The USS Bainbridge (CGN-25) runs aground off the Dutch coast after calling at the port of Den Helder.

1 Luglio 1989 - (incidente unità navale nucleare) Atlantic: In early July the Royal Navy diesel submarine Upholder experiences a power failure and plunges several hundred feet while submerged off the west coast of Scotland during sea trials.

1 Luglio 1989 - (incidente unità navale nucleare) Pacific: In July, a flooding incident aboard the USS Houston (SSN-713) results in eight crewmembers being reassigned for psychological reasons.

16 Luglio 1989 - (incidente unità navale nucleare) Arctic: A Soviet Alpha class nuclear-powered attack submarine is spotted on the surface billowing smoke from its observation tower off the coast of Norway in the Barents Sea. According to the Soviets the smoke was exhaust from the ship's diesel engines. The ship was on a combat training mission and was shifting its power load to a battery when "one of the cells was short-circuited..." 16 Luglio 1989 - Norvegia. Un sottomarino nucleare sovietico prende fuoco al largo delle coste norvegesi: è il terzo incidente dello stesso tipo nella stessa zona in meno di quattro mesi

26 Luglio 1989 - (incidente unità navale nucleare) Indian: A sailor on the USS Conolly (DD-979) is lost after falling overboard as the ship patrols in the Persian Gulf.

27 Luglio 1989 - (incidente unità navale nucleare) Atlantic: About 330 gallons of coolant water from the USS Abraham Lincoln (CVN-72) spills into the James River while the ship is docked at

Newport News, Virginia. A shipyard spokesperson terms the amount of radioactivity released as "minuscule".

1 Agosto 1989 - (incidente unità navale nucleare) Pacific: In August, a small fire is reported aboard the USS Houston (SSN-713).

5 Agosto 1989 - (incidente unità navale nucleare) Atlantic: A fire breaks out in an electric motor aboard the Royal Navy nuclear-powered submarine Valiant while in port at the Faslane submarine base on the River Clyde in south west Scotland. There are no reported injuries and a Defense Ministry spokesperson says the fire posed no danger to the submarine's nuclear reactor.

12 Agosto 1989 - (incidente unità navale nucleare) Arctic: A Soviet Foxtrot class diesel-powered submarine catches the nets of a Norwegian fishing trawler southeast of Bear Island in international waters in the Norwegian sea. Five submarine crewmembers try to cut the submarine free using a blow-torch but the torch's connecting hoses are too short, and so instead they use axes and sledge hammers to free their vessel. The trawler's uninsured net valued at \$70,000 was lost.

18 Agosto 1989 - (incidente unità navale nucleare) Atlantic: Five sailors are tossed overboard while being lowered from the USS Saratoga (CV-60) during a man-overboard drill 70 miles off the coast of Jacksonville, Florida. No injuries are reported.

22 Agosto 1989 - (incidente unità navale nucleare) Atlantic: A huge aircraft elevator carrying dozens of visitors touring the USS John F. Kennedy (CV-67) fails, injuring as many as 20 people, while the ship is holding an open house while docked at Port Everglades, Florida. A hydraulic line on the elevator broke, spraying fluid and causing the elevator to drop slightly and come to a sudden stop.

1 Settembre 1989 - (incidente unità navale nucleare) Pacific: In September, an incident with a torpedo is reported aboard the USS Houston (SSN-713).

12 Settembre 1989 - (incidente unità navale nucleare) Atlantic: A Royal Navy Resolution class nuclear-powered ballistic missile submarine loses a very low frequency (VLF) communications buoy, when the buoy snags the nets of the fishing vessel Contester in the Irish Sea 25 nautical miles north east of Dublin, Ireland. The submarine, which had been trailing the buoy while submerged, came to periscope depth after the incident to check for damage. According to a U.K. Ministry of Defense spokesperson, the buoy's towing wire parted almost immediately and the submarine sustained no damage. Irish reports, however, say the Contester was dragged backwards for about a mile at a speed of two knots before it broke free. It pulled in the buoy when it winched in its nets.

12 Settembre 1989 - (incidente unità navale nucleare) Atlantic: Two sailors from the USS Kalamazoo (AOR-6) are lost in the Atlantic when they are washed overboard while working on the maindeck.

22 Settembre 1989 - (incidente unità navale nucleare) Atlantic: The USS Narwhal (SSN-671) sustains minor damage during Hurricane Hugo while submerged at the Charleston Naval Base, South Carolina. The ship was moored with nine double wires and two three-inch ship's lines, all but one of which were ripped loose during the first half of the storm. During the eye of the storm, the captain discovered the submarine had drifted to the center of the Cooper River. Tugboats and the Narwhal crew unsuccessfully tried to move the submarine back to the pier. As the storm began again, the captain submerged the submarine in the river and the Narwhal rode out the remainder of the hurricane with only part of its conning tower exposed.

22 Settembre 1989 - (incidente unità navale nucleare) Atlantic: A Soviet guided missile destroyer conducting gunnery exercises in the Mediterranean south of Crete accidentally fires a shell which passes in front of a U.S. P-3 Orion surveillance plane and explodes, creating a turbulence which jolts the aircraft. No injuries are reported, and the Soviets issue an apology.

29 Settembre 1989 - (incidente unità navale nucleare) Atlantic: The newly-commissioned USS Pennsylvania (SSBN-735) runs aground as it enters the channel during its first visit to Port Canaveral, Florida. Tugboats free the submarine in about two hours, and a Navy spokesperson says, "As far as we know, it's fine." Port Canaveral is a public dock facility adjacent to the Navy complex where submarines are loaded with missiles for test firings off Cape Canaveral.

6 Ottobre 1989 - (incidente unità navale nucleare) Atlantic: A Navy F-14 Tomcat jet crashes into a fire wall aboard the USS John F. Kennedy (CV-67), catching fire and plunging into the sea. The two crewmembers are able to eject safely. The ship is on training exercises in the Atlantic off the coast of Norfolk, Virginia.

9 Ottobre 1989 - (incidente unità navale nucleare) Atlantic: An electrical fire in the forward elevator machinery room on the USS Forrestal (CV-59) injures nine sailors while the ship is in dock at the Mayport Naval Station, Florida.

11 Ottobre 1989 - (incidente unità navale nucleare) Atlantic: The USS EL Paso (LKA-177) accidentally hits the USS Iwo Jima (LPH-2) with rounds from its Phalanx close-in weapons system during gunnery practice 80 miles southeast of Norfolk, Virginia. One man onboard the Iwo Jima is killed and another is injured. Damage is slight.

17 Ottobre 1989 - (incidente unità navale nucleare) Pacific: A sailor is lost off the USS Downes (FF-1070) after falling over board while the ship is on exercises off Japan.

19 Ottobre 1989 - Vandellos, Spagna. Alle ore 21,39 nella sala delle turbine della centrale nucleare, si ha un inizio di incendio che provoca indirettamente un allagamento ed un danneggiamento di differenti sistemi, fra cui il refrigeratore del reattore. Questo incidente è classificato a livello 5 della scala INES.

20 ottobre 1989 - (incidente unità navale nucleare) Atlantic: Towards the end of October the Royal Navy mine sweeper Brecon runs aground on the Isle of Arran off the western coast of Scotland during exercises.

29 Ottobre 1989 - (incidente unità navale nucleare) Atlantic: A pilot making his first touch-and-go attempt aboard the USS Lexington (AVT-16) crashes on to the flight deck, killing five and injuring 19 crewmembers, while the ship is on training maneuvers in the Gulf of Mexico.

30 Ottobre 1989 - (incidente unità navale nucleare) Indian: A F/A-18 Hornet aircraft from the USS Midway (CV-41) mistakenly drops a 500-pound bomb on the deck of the USS Reeves (CG-24), during training exercises in the Indian Ocean 32 miles south of Diego Garcia, creating a five-foot hole in the bow, sparking a small fire, and injuring five sailors.

31 Ottobre 1989 - (incidente unità navale nucleare) Atlantic: A wave sweeps three sailors and 38 non-nuclear missiles from the USS Dwight D. Eisenhower (CVN-69) during night-time cargo loading about 90 miles south east of Cape Hatteras, North Carolina. One sailor is drowned and two are rescued.

31 Ottobre 1989 - (incidente unità navale nucleare) Pacific: A sailor is lost in the Pacific about 620 miles north of Wake Island after being washed overboard from the USS Carl Vinson (CVN-70).

1 Novembre 1989 - (incidente unità navale nucleare) Pacific: The U.S. fishing trawler Recruit is towed a stern by a submarine caught in its nets 28 miles west of the Olympic Peninsula, Washington. The crew drops \$20,000 worth of equipment overboard to avoid being pulled under water.

1 Novembre 1989 - (incidente unità navale nucleare) Atlantic: Fire in the engine room of the USS Monongahela (AO-178) off the coast of Spain injures nine.

1 Novembre 1989 - (incidente unità navale nucleare) Pacific: In November, a navigation error aboard the USS Houston (SSN-713) results in the loss of a sonar device.

2 Novembre 1989 - (incidente unità navale nucleare) Arctic: A Soviet Foxtrot class diesel-powered submarine is caught in the nets of the Norwegian trawler T.O. Senior in the Barents Sea, 50 miles north east of Vardoe, Norway. One Soviet crewmember is washed into the sea while trying to free the submarine, and is rescued soon afterwards. Both the Norwegian coastguard and the Soviet trawler UUYP 1574 try unsuccessfully to loosen the submarine, and the nets are eventually severed by the rough sea.

8 Novembre 1989 - (incidente unità navale nucleare) Atlantic: A sailor aboard the USS Forrestal (CV-59) is fatally injured when a hatch falls on him.

9 Novembre 1989 - (incidente unità navale nucleare) Atlantic: The Norwegian diesel-powered submarine Utsira is hit by a training torpedo during an exercise in the North Sea and slightly damaged.

11 Novembre 1989 - (incidente unità navale nucleare) Pacific: The USS Kinkaid (DD-965) collides with the Singapore merchant ship Kota Petani in the Strait of Malacca, killing one U.S. sailor and injuring four crewmembers. Fires break out aboard both ships and the Kota Petani sustains major damage.

13 Novembre 1989 - (incidente unità navale nucleare) Atlantic: An unknown Royal Navy submarine snags the nets of the fishing vessel Scotia off the coast of Scotland and drags the vessel backwards for two miles before breaking free. The submarine surfaces and reports the incident and ensures that the crew of the Scotia are safe. The Scotia sustains damage to its propeller as well as to its gear, and the submarine has minor damage.

13 Novembre 1989 - (incidente unità navale nucleare) Atlantic: A fire on the USS Finback (SSN-670) forces the vessel to cut short sea trials and return to port in Norfolk, Virginia. There are no reported injuries and damage is minor.

14 Novembre 1989 - (incidente unità navale nucleare) Atlantic: A fire in the hanger deck of the USS Inchon (LPH-12) injures 31 people while the ship is docked for maintenance in Norfolk, Virginia.

24 Novembre 1989 - Greifswald, Germania Est: incendio. Operators disabled three of six cooling pumps to test emergency shutoffs. Instead of the expected automatic shutdown a fourth pump failed

causing excessive heating which damaged ten fuel rods. The accident was attributed to sticky relay contacts and generally poor construction in the Soviet-built reactor.

12 Dicembre 1989 - (incidente unità navale nucleare) Atlantic: The Canadian Navy destroyer Saguenay is struck three times by the U.S. fishing vessel Concordia near Halifax, Nova Scotia after it chased the vessel out of a Canadian fishing zone. Damages to the Saguenay are slight

1990 – Azerbaijan. Ribelli Azerbaigiani attaccano un deposito di ordigni nucleari nei pressi di Baku

1990 - Francia: scoperti 5 m/c d'acqua radioattiva presso la stazione nucleare di Fessenheim

1990 - Francia: avaria nelle tubature della stazione nucleare di Gravelines

1990 - Francia: il reattore di Creys-Malville viene spento per infiltrazione di sodio

1990 - Francia: vengono contaminati 2 operai nella stazione nucleare di Blayais

1990 - Gran Bretagna: Infiltrazione di sodio nel reattore di Dounreay

1990 - Spagna: infiltrazione d'acqua in parti dell'impianto nucleare di Ascò

1990 - Germania: infiltrazione di tritio nella stazione nucleare di Kruemmel

1990 - Bulgaria, centrale di Kozloduy: spegnimento di un reattore a causa di un terremoto

1990 - Belgio: avaria al sistema di raffreddamento nella stazione nucleare di Doel

1990 - Slovacchia: surriscaldamento cavi per il controllo del reattore e la protezione del sistema

1990 - Slovacchia: congelamento di alcune parti della centrale per aumento del livello di raffreddamento

1990 - Sasolburg, Sud Africa: fonte compromessa A cobalt-60 industrial radiography source was left behind following radiography work, with the operator failing to realize the source was left behind. Six people handled the source for 5 to 20 minutes, three of whom received whole body doses of 10 to 55 rad. One person had to have the right hand amputated above the wrist. Three others suffered skin injuries on the fingers.

Febbraio 1990 - Azerbaijan: Azerbaigiani rebels unsuccessfully attacked a Soviet military depot near Baku where nuclear weapons are stored; Soviet troops were sent to secure the base

29 Marzo 1990 - USA: incidenti da fluoroscopia A male patient underwent several procedures using fluoroscopy (two coronary angiographies, a coronary angioplasty, and a coronary artery bypass graft) in the same day. About one month later the skin became reddened on his back, eventually developing a small ulcerated area. The localized dose probably exceeded 2000 rads.

21 Giugno 1990 - Soreq, Israele: incidente in un impianto radioattivo commerciale The accident occurred at a commercial irradiator, in which packages are automatically moved through an area exposed to a cobalt-60 source. Several maintenance problems contributed to the accident, which began when packages became jammed in the irradiation area. An operator choose to reject the radiation warning indicator in favor of an indicator erroneously showing the cobalt source to be in

safe (shielded) mode. He overrode safety features to enter the irradiation room; after a short time he felt burning in his eyes and a headache. He then left the room and contacted his supervisor, and shortly after began vomiting; he arrived at a hospital 8 hours after exposure. The worker received a whole body dose between 1000 and 2000 rads and died 36 days later of multiple organ failure, despite efforts including a bone marrow transplant.

24 Giugno 1990 - Chernobyl, Ucraina: evento sub critico di moltiplicazione di neutroni nella stanza 304/3 del reattore danneggiato

25 Giugno 1990 - Shanghai, Cina: incidente da irradiazione An accident occurred at an industrial irradiator which used a 23,000-curie cobalt-60 source for sterilization of traditional Chinese medicines. Access to the irradiation room was via a double door which had safety interlocks to prevent enter while the source was unshielded. However, the motor on one door had previously failed, putting the door out of commission, and a power failure disabled the interlock on the second door. One worker additionally violated procedure by turning on lights in the room without turning on electricity of the source system. During this period 7 workers entered the room to arrange product boxes for irradiation, with exposure times up to 40 minutes. A metal shroud prevented them from seeing that the source was exposed. One worker had nausea within 20 minutes, and several were vomiting within 2 hours. Several were hospitalized the following day. Two workers sustained exposures of 1,200 rad and 1,100 rad and were given bone marrow transplants from relatives, but both died (25 and 90 days after exposure, respectively). Exposures to the other 5 workers were at least 200 rad.

Luglio 1990 - Chernobyl, Ucraina: evento sub critico di moltiplicazione di neutroni nella stanza 304/3 del reattore danneggiato

10/20 Dicembre 1990 - Zarragosa, Spagna: incidente radioterapico An error occurred in the maintenance and calibration of a linear accelerator used for clinical radiotherapy; combined with procedural violations, overdosages of 200-700% occurred. The accelerator is related to the Therac-25 involved in several accidents in the United States and Canada. A total of 27 patients were overexposed during treatments for tumors between 10 and 20 December. Signs of radiation injury were observed on 26 December, and the first death occurred possibly shortly thereafter. By 28 February 1991 three patients had died, and an additional 7 died by 31 March 1991. Spanish authorities were reportedly hesitant to release details of the accident, but sought foreign assistance in early 1991. A total of 18 eventually died as a result of radiation overexposures. The remaining patients all suffered major disabilities as a result.

14 Dicembre 1990 -Calabria, Italia. Spiaggiamento della motonave Rosso in Calabria, nella zona di Formiciche. Si sospetta che l'incidente sia avvenuto in seguito ad un fallito affondamento di rifiuti tossici radioattivi.

>>>>GUARDA LO SPECIAL: ESPLOSIONI E TEST NUCLEARI NEL MONDO da ProgettoHumus

>>>> INCIDENTI NUCLEARI FINO AL 1970

>>>> INCIDENTI NUCLEARI DAL 1991 AD OGGI

« Ultima modifica: 17 Nov 08, 15:48:53 da Administrator »