BEZNAU

1. Parler
2. Norris
3. RDV

AUG 8 1979

bcc: LVGossick
JRShea
JDLafleur
AEMGore
EDO Reading File

MEMORANDUM FOR: Commissioner Gilinsky

FROM: James R. Shea, Director
Office of International Programs

THRU: Executive Director for Operations (Signed) T. A. Rehm

SUBJECT: LIST OF FOREIGN REACTOR INCIDENTS

Recently, in discussions of the list of Soviet nuclear incidents, SECY-79-416, you suggested to Joe Lafleur that a list of other (non-U.S.S.R.) foreign incidents would also be useful. I am enclosing a preliminary list of such incidents. These two foreign incident lists will be combined with known U.S. incidents in a worldwide list for use by the TMI-2 investigations. I will attempt to keep the foreign lists updated as more information comes to our attention.

We are currently preparing lists of foreign incidents that either have influenced NRC regulatory activities or that had characteristics in common with TMI-2. The enclosed list is of nuclear incidents that either made worldwide news, or are considered to have fairly serious safety implications, or both.

Original Signed by
Joseph D. LaFleur, Jr.

James R. Shea, Director
Office of International Programs

Enclosure:
List of Foreign Reactor Incidents

cc: Chairman Hendrie
Commissioner Kennedy
Commissioner Bradford
Commissioner Ahearne
A. Kenneke, OPE
L. Bickwit, OGC
S. Chilk, SECY

bcc Kevin Connell

Requested clearance

POOR ORIGINAL

OFFICE ►	IP		IP	EDO		
SURNAME ►	AEMGore:kf	JDLafleur	JRShea	LVGossick		
DATE ►	8/7/79	8/8/79	8/8/79	8/8/79	8001170835	S

NRC FORM 318 (9-76) NRCM 0240 ☆ U. S. GOVERNMENT PRINTING OFFICE: 1976 — 626-624

Date	Place	Cause/Damage	Radiation	Reference
Dec. 12, 1952	Chalk River, Canada (NRX)	Control Rod mal-operation, safety circuit failure-complex. Q.M. - Dump of D_2O moderator. Core badly damaged, removed, replaced.	P - none, except in clean-up; many P received doses, highest 17 r, most less than 3.9 r.	The Technology of Nuclear Reactor Safety Vol. I. MIT Press. Div. of Tech. Info., U Eds. T. J. Thompson an J. G. Beckerley - WASH-1250
Oct. 9, 1957	Windscale, England	Wigner energy release, U-burning triggered by nuclear overheating, Q.M. - Flooding w/H_2O. Severe core damage; reactor not rebuilt.	P - none serious. R - widespread radio-activity, milk over 200 mi^2 area destroyed,	Same as above.
Jan. 21, 1969	Lucens, Vaud, Switzerland (Experimental)	1) CO_2 coolant was released. 2) the D_2O moderator tank ruptured and about 500 gal. of deuterium spilled. 3) a fuel element was damaged.	Large releases of radioactivity in reactor cavern & into caverns adjacent to reactor cavern. Penetrated control room but readings next day showed that contamination was equal to the maximum permissible levels for continuous operation. Radioactivity expelled into the air was maintained within the limits prescribed for normal operation. Exposure to public at level negligible compared with that due to natural radioactivity.	Nuclear Safety, Vol. 1 No. 1, Jan-Feb, 1975

P=person
R=radiation
Q.M.=quenching method

Date	Place	Cause/Damage	Radiation	Reference
Oct. 17, 1969	St. Laurent 1, France	Fuel meltdown during a machine-controlled refueling operation at power.	- Most of contamination trapped in the diagrid and heat exchangers. - Top of diagrid at accident was 60-200 Rems/hr. 3 months later, 15-20 Rems/hr.	Nuclear Safety, Vol. 12, Jan-Feb, 1971
June 4, 1979	Cadarache Nuclear Center, France (Experimental)	Incident in the cooling loop; Safety devices functioned normally w/shutdown of the nuclear reaction and startup of emergency cooling.	No consequence to personnel and caused no release of radioactive liquid to the environment.	Cable to IP, 6/4/79

Date	Place	Cause/Damage	Radiation	Reference
Jan. 13, 1977	Gundremmingen	Breakdown of the 220-KV electric power system leading offsite due [illegible] insulators. Safety valves of primary system opened and released large amounts of steam into the safety containment of the reactor. Safety valves damaged during fluid discharge.	None to the environment.	State Department cables
Jan. 5, 1976	Jaslovske, Bohunice Czechoslovakia	According to the report NRC has, filler got into the loading mechanism and prevented safety emplacement of a new fuel element. The element, under pressure of 6 MPa (60 at) was shot out of the reactor followed by radioactive coolant (carbon dioxide) into the area of the reactor. Order was issued for abandoning the premises.	Two workers were suffocated by the escaping carbon dioxide. The radioactive gas was syphoned off into accident gas tanks, where after a short drying-off period, it was released through filters into the air.	Charter 77 Document on Czechoslovak Nuclear Program and Alleged Accidents. (Charter 77 is dissident group of Czechoslovakia.) Czechoslovakia local newspaper report. No official report available.
Feb. 24, 1977	Same place in Czechoslovakia	Careless assembly of fuel element and error in its loading resulted in overheating of the primary circuit. Heat damage of the fuel element and violation of the caisson piping caused leakage of carbon dioxide and deuterium and, thus, contamination of the entire primary circuit. The overheating violated the tightness of the steam generator and part of the secondary circuit was contaminated.	Leaking radioactive tritium was brought through airconditioning system into the operation rooms. After the reactor was shutdown, part of the activated steam from the secondary circuit was released into the air. Also, a certain amount of activated solution was released into the sewage system and contaminated the creek in the neighboring village, Zikovce.	Same as above
July 28, 1977*	Pickering Station Ontario, Canada	Feedwater pump failed and auxiliary pumps not available		*Have requested more detailed information o this incident