

IMMEDIATE

PRELIMINARY NOTIFICATION

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April 2, 1979

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE--PNO-79-67H

This preliminary notification constitutes summary information of an event of safety or public interest significance. The information presented is a summary of information as of 12 noon on 4/2/79.

Facility: Three Mile Island Unit 2  
Middletown, Pennsylvania (DN 50-320)

Subject: NUCLEAR INCIDENT AT THREE MILE ISLAND

Plant Status

Reactor pressure is being held at about 1000 psi. Incore thermocouples continue to show a decrease in fuel channel temperatures, with all measurements below about 475 degrees F. Bulk core inlet and outlet temperatures are 280 degrees F. At 11 p.m., April 1, a containment air sample indicated 2.3% hydrogen.

Further analyses and consultations with experts has led to the development of a strong consensus that the net oxygen generation rate inside the noncondensable bubble in the reactor is much less than originally conservatively estimated. Also, measurements at the plant appear to indicate that the volume of gases within the bubble is being significantly reduced. Further developments are being closely followed to confirm these favorable indications.

Action on Other Facilities

The Three Mile Island Unit 2 (TMI-2) pressurized water reactor was supplied by Babcock & Wilcox (B&W). All utilities with an operating B&W reactor were sent an NRC Bulletin yesterday to provide them with information about the TMI-2 incident; require a prompt review of their plant conditions, and to effect action to prevent such an incident. NRC inspectors are being sent to each licensed B&W reactor to provide increased inspection coverage. Additional reactor shutdowns or power reductions are not being required by the NRC at this time.

Environmental Status

Thirty-seven thermoluminescent dosimetry (TLD) stations were established by the NRC at distances from about one mile to about 12 miles from the plant. Multiple dosimeters are placed at each location - one will be

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left in place for a cumulative dose measurement; another is pulled and replaced each day. TLD's collected on April 1, 1979 indicated the following dose rates in populated areas:

<u>Location</u>	<u>Dose Rate (Milliroentgens per Hour)</u>
Middletown	0.044
Goldsboro	0.13
Goldsboro	0.040
Lewisberry	0.053
Pleasant Grove	0.041
York Haven	0.074
Conewago Falls	0.044
Emigsville	0.053

The highest dosimeter reading was recorded at a location  $\frac{1}{2}$  mile ENE of the plant. The average dose rate at this location was 1.1 milliroentgen per hour.

For comparison purposes, the licensee's environmental report for 1977 when one unit was operating, indicated that the average dose rate at offsite stations located within three miles of the plant was 0.007 mR/hr.

Calculations using the TLD data indicate a population dose of approximately 200 man-rems for the 24-hour period. This means there was an average radiation dose of about 0.3 millirems per person in the population within a 20-mile radius of the plant.

ARM's flights were continued at three-hour intervals on April 1, and 2, 1979. The plume readings were essentially the same for all the flights. Direction of the plume varied from SW to WNW. The maximum level at one mile from the plant was about 3 mR/hr at an altitude of 500 feet. At three miles, the levels were from 0.1 to 0.5 mR/hr.

Offsite ground level surveys taken between 11:00 a.m. April 1, and 4:30 a.m. April 2, on both sides of the river in a southerly direction generally showed levels of 0.01 to 0.04 mR/hr.

Nine milk samples collected and analyzed by the State of Pennsylvania on April 1 showed no detectable radioiodine.

The licensee reported results from 5 milk samples taken from four locations around the plant collected the evening of March 30, 1979. The samples included one sample of goat's milk and four samples of cow's milk. The highest level was reported for the goat's milk and was 41 picocuries per liter (pCi/l.). The highest level in cow's milk was 8.4 pCi/l. The NRC has estimated the thyroid dose to a child drinking milk with concentrations of radioiodine at 41 pCi/l to be about 0.2 millirem per day. The thyroid dose to an adult would be about 0.07 millirem per day. Each of these samples indicated levels slightly above normal background levels for radioiodine.

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The Bureau of Radiological Health, HEW, also reported identifying radioiodine in six samples of milk collected on March 31, 1979 from four locations around the plant. Analyses of the samples identified near background levels of radioiodine. The levels ranged from the minimum detectable limit to about 40 pCi/l.

For comparison, the licensee's environmental report for 1977 showed observations of 0.74 to 31 pCi/l of I-131 in milk throughout the year previous to the incident. At 12,000 pCi/l, the U.S. Department of Health, Education, and Welfare recommends placing dairy herds on stored feed. Local herds are already on stored feed.

Contact: DThompson, IE x28487 NCMoseley, IE x28160

Distribution: Transmitted H St 3:50 p.m.  
Chairman Hendrie Commissioner Bradford  
Commissioner Kennedy Commissioner Ahearne  
Commissioner Gilinsky

S. J. Chilk, SECY  
C. C. Kammerer, CA  
(For Distribution)

Transmitted: MNBB 4:00 p.m.  
L. V. Gossick, EDO  
H. L. Ornstein, EDO  
J. J. Fouchard, PA  
N. M. Haller, MPA  
R. G. Ryan, OSP  
H. K. Shapar, ELD  
P. Bldg 4:05 p.  
H. R. Denton, NRR  
R. C. DeYoung, NRR  
R. J. Mattson, NRR  
V. Stello, NRR  
R. S. Boyd, NRR  
SS Bldg 4:05  
W. J. Dircks, NMSS

J. G. Davis, IE  
Region I 4:11  
Region II 4:25  
Region III 4:35  
Region IV 4:45  
Region V 4:45  
(MAIL) 5:00  
J. J. Cummings, OIA  
R. Minogue, SD

Site - 4:30

White House Situation Room \_\_\_\_\_  
(Handcarry \_\_\_\_\_)  
EPA \_\_\_\_\_  
FDA/BRH \_\_\_\_\_  
DOE/EOC 5:05  
FAA \_\_\_\_\_  
FDAA 4:45

Attachment 1:  
Radiation Dose Rate Map

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### NRC THERMOLUMINESCENT DOSIMETER (TLD) DATA

Numbers are cumulative radiation dose in millirem over a 23 hour period during March 31 and April 1, 1979.

The highest dose ( $25 \pm 8$  mrem) was measured at 0.5 miles ENE of the plant; the next highest ( $10 \pm 2$  mrem) at 1 mile SSE.

