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IMMEDIATE
PRELIMINARY NOTIFICATION

April 17, 1979

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

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 7:00 a.m. on April 17, 1979.

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

Subject: NUCLEAR INCIDENT AT THREE MILE ISLAND

Plant Status

The primary coolant temperature remains at approximately 250 degrees F. Three of the incore thermocouple readings remain above 300 degrees F with the highest at 340 degrees F.

As of 0330 April 17, twenty of 90 charcoal filter elements in train A of the Auxiliary Building Ventilation system have been replaced. This work began on April 12.

The containment hydrogen concentration has been tested. Results indicate a level of about 1.36%.

Environment Status

Offsite radiation levels identified by NRC survey teams were consistent with normal background levels (0.02 mR/hr. maximum) with the exception of one reading of 0.14 mR/hr. These results were obtained from routine surveys performed downwind on the east side of the Susquehanna River at distances up to five miles north and south of the site.

By 3:00 p.m. on April 16, 571 local residents had been scanned with the whole body counter located in Middletown. Scan results indicate no radiation levels above normal body levels.

An Aerial Measuring System (AMS) survey was conducted on April 16. The wind speed was 5 mph. No plume could be identified. At 1/4 mile from the reactor building, readings of 0.030 - 0.040 mR/hr were observed from 180 - 270°. These readings appeared to be independent of the wind direction.

Dose rates (47 locations) as measured by NRC thermoluminescent dosimeters (TLD's) for the past 24-hour period of April 17 are near expected natural background levels.

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Iodine concentrations measured in the Unit 2 ventilation stack since PNO-79-67W (April 16, 1979) are:

<u>Time</u>	<u>Activity (uCi/cc)</u>
4/15 (2140) - 4/15 (2357)	2.5×10^{-7}
4/16 (0408) - 4/16 (0758)	2.3×10^{-7}
4/16 (1156) - 4/16 (1550)	2.1×10^{-7}
4/16 (1556) - 4/16 (1810)	3.6×10^{-7}
4/16 (1810) - 4/16 (2356)	1.4×10^{-7}

The NRC took the daily air sample near the observation center starting at 1703 on April 15 and ending at 1747 on April 16. Analysis of this sample indicated that the concentration of Iodine-131 during the 24-hour period averaged 1.7×10^{-11} uCi/cc (17 picocuries/m³) which correlates with the plume wind being in this sector a large percentage of the time.

In response to increased Iodine-131 levels observed in environmental air samples, NRC has been taking approximately 5 air samples in each 8-hour period. During the 24-hour period ending midnight - April 16, 1979, three air samples from areas downwind of the plant were between 1.1 and 1.2×10^{-10} uCi/ml (110-120 picocuries per cubic meter). The average of the 11 air samples was 6.5×10^{-11} uCi/cc (65 picocuries/m³). The 8 samples taken since 10 p.m. on April 16, 1979, have shown no activity above the MDA (approximately 20 picocuries/m³). Since the Iodine-131 release rates are similar to previous rates, the observed increases are believed due to meteorological differences. Review of plant operations and possible release paths indicate that the source of the Iodine-131 is apparently the monitored release through the ventilation stack. However several changes to in-plant conditions were made. The makeup tank pressure was reduced. A portion of the charcoal filters in the Auxiliary Building ventilation system was replaced and areas in the Auxiliary Building were sprayed with sodium hydroxide and sodium thiosulfate.

During the period April 13 to 16, a total of 54 DOE samples including 1 soil sample, 4 rain water samples, 16 standing water samples, 22 grass samples, 8 ground level air filter samples and 3 air filter samples from helicopter flights were analyzed by DOE using a GE-Li gamma spectrometer. The samples were collected in the path of air discharges from the Three Mile Island station. Fourteen of the grass samples indicated that

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Iodine-131, if present, was less than the minimum detectable activity (MDA) of 4.0×10^{-5} microcuries per square meters (40 picocuries/square meter). The eight samples that showed results above MDA ranged from 4.0×10^{-5} microcuries per square meter (40 picocuries/square meters) to 7.3×10^{-4} microcuries per square meter (730 picocuries/square meters). Soil, standing water, and rain water samples all indicated less than the MDA's. The MDA for soil is 7.0×10^{-4} microcuries per square meter (700 picocuries/square meters); and for water is less than 7.0×10^{-8} microcuries per cubic centimeter (70 picocuries per liter).

The Commonwealth of Pennsylvania, DER, analyzed two milk samples taken on April 16, 1979. There was no detectable Iodine-131.

EPA analyzed nine air samples between April 10 and April 11. Iodine-131 activity ranged from 1.2×10^{-13} to 1.7×10^{-12} uCi/cc. (0.12 - 1.7 picocuries per cubic meter). Twenty-five soil samples were analyzed and showed only natural activity, including normal background levels of Cs-137. EPA TLD's from 34 locations for the period March 31 through April 8 showed background except for two, York Haven and Goldsboro, which showed 2.0 and 2.5 mR respectively for this period. Personnel badges from 44 residents for the same period showed no net exposures above background.

The Commonwealth of Pennsylvania has been informed of these results.

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