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JDL

NOTE: CONTINUATION  
OF MISSIONS  
IMMEDIATE ATTACHED

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USWRC:JBLAFLEUR  
3/29/77:442-7785  
OES/NET/EIC:

IMMEDIATE ATHENS, BERN IMMEDIATE, BOMBAY IMMEDIATE, BONN IMM-  
EDIATE, BRASILIA IMMEDIATE, BRUSSELS IMMEDIATE, COPENHAGEN IMMEDIATE,

USIAEA, USOECD, USEEC

N/A

TECH

NUCLEAR POWER PLANT EMERGENCY SITUATION

REFERENCE: STATE 577697, STATE 75113

1. THE FOLLOWING IS SUPPLEMENTAL INFORMATION ON THE THREE  
MILE ISLAND INCIDENT. PLEASE NOTIFY NRC OFFICIAL CONTACTS  
IN HOST GOVERNMENTS AND PARIS PASS TO DOE ASST. SECRETARY  
BERGOLD, AT OPENING OF BUSINESS FRIDAY, AND USE, AS  
APPROPRIATE, IN ANSWERING INQUIRIES.

2. THE LICENSEE, METROPOLITAN EDISON COMPANY, NOTIFIED THE  
NRC REGIONAL OFFICE AT APPROXIMATELY 7:45 A.M. ON MARCH 28  
OF AN INCIDENT AT THREE MILE ISLAND UNIT 2 WHICH OCCURRED  
AT APPROXIMATELY 4:00 A.M. AT 98% POWER WHEN THE FEED PUMPS  
TRIPPED DUE TO A FEEDWATER SYSTEM PROBLEM. THIS RESULTED  
IN A TURBINE TRIP AND SUBSEQUENT REACTOR SCRAM DUE TO HIGH  
REACTOR COOLANT PRESSURE. A COMBINATION OF FEED PUMP  
OPERATION AND THE OPENING OF THE RELIEF VALVES ON THE  
PRESSURIZER AND THE STEAM GENERATOR CAUSED A REACTOR COOLANT  
SYSTEM (RCS) COOLDOWN. AT 1600 POUNDS PER SQUARE INCH  
PRESSURE (PSIG), ECCS WATER INJECTION OCCURRED AUTOMATICALLY.  
ALL ECCS COMPONENTS STARTED AND OPERATED PROPERLY. WATER  
LEVEL INCREASED IN THE PRESSURIZER, AND ECCS INJECTION WAS

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MANUALLY SHUT DOWN APPROXIMATELY 5 MINUTES AFTER ACTUATION. IT WAS SUBSEQUENTLY RESUMED. THE REACTOR COOLANT PUMPS WERE SHUT DOWN WHEN LOW NET POSITIVE SUCTION HEAD LIMITS WERE APPROACHED.

3. ABOUT 7:00 A.M., HIGH ACTIVITY WAS NOTED IN THE REACTOR COOLANT SYSTEM SAMPLE LINES (APPROXIMATELY 600 MR/HR CONTACT READINGS). A SITE EMERGENCY WAS THEN DECLARED. AT APPROXIMATELY 7:30 A.M., A GENERAL EMERGENCY WAS DECLARED BASED ON HIGH RADIATION LEVELS IN THE REACTOR BUILDING. AT 8:30 A.M. SITE BOUNDARY RADIATION LEVELS WERE REPORTED TO NOT BE SIGNIFICANT (LESS THAN 1 MR/HR). THE SOURCE OF ACTIVITY WAS STATED TO BE FAILED FUEL AS A RESULT OF THE TRANSIENT, AND DUE TO A KNOWN PREVIOUS PRIMARY-TO-SECONDARY LEAK IN STEAM GENERATOR B.

4. THE REGION I INCIDENT RESPONSE CENTER WAS ACTIVATED AT 8:10 A.M., AND DIRECT COMMUNICATIONS WITH THE LICENSEE AND NRC HEADQUARTERS WERE ESTABLISHED. THE RESPONSE TEAM WAS DISPATCHED AT 8:45 A.M. AND ARRIVED AT THE SITE AT 10:05 A.M.

5. AT 10:45 A.M. THE REACTOR COOLANT SYSTEM PRESSURE WAS BEING HELD AT 1950 PSIG WITH TEMPERATURE AT 220 DEGREES F. IN THE COLD LEG. BY 10:45 A.M., RADIATION LEVELS OF 3 MR/HR HAD BEEN DETECTED 500 YARDS OFFSITE.

6. AS OF 3:30 P.M., THE PLANT WAS BEING SLOWLY COOLED DOWN WITH REACTOR COOLANT SYSTEM (RCS) PRESSURE AT 450 PSI, USING NORMAL LETDOWN AND MAKEUP FLOW PATHS. A STEAM BUBBLE HAD BEEN COLLAPSED IN ONE OF THE REACTOR COOLANT LOOP HOT LEGS, AND SOME NATURAL CIRCULATION COOLING HAD BEEN ESTABLISHED. PRESSURIZER LEVEL HAD BEEN DECREASED TO THE HIGH RANGE OF VISIBLE INDICATION, AND SOME PRESSURIZER HEATERS WERE IN OPERATION. THE SECONDARY PLANT WAS BEING ALIGNED TO DRAW A VACUUM IN THE MAIN CONDENSER AND TO USE ONE OF THE STEAM GENERATORS FOR HEAT REMOVAL.

7. AS OF 3:30 P.M., A PLUME APPROXIMATELY 1/2 MILE WIDE AND READING GENERALLY 1 MR/HR WAS MOVING TO THE NORTH OF THE PLANT. THE AIRBORNE RADIOLOGICAL MONITORING TEAM HELICOPTER WAS BEING USED TO DEFINE THE LENGTH OF THE PLUME. AIRBORNE IODINE LEVELS OF UP TO 1 X 10<sup>-5</sup> UCI/ML WERE DETECTED IN MIDDLETOWN, PENNSYLVANIA, WHICH IS LOCATED NORTH OF THE SITE.

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8. RADIATION LEVELS OUTSIDE THE PLANT HAVE OCCURRED DUE TO VENTING OF LOW-LEVEL RADIOACTIVE GASES FROM THE AUXILIARY BUILDINGS THROUGH THE FILTERED PLANT VENTILATION SYSTEM.

9. IT IS CONSERVATIVELY ESTIMATED THAT THE COLLECTIVE DOSE TO THE LOCAL POPULATION FROM THE INCIDENT SO FAR HAS BEEN OF THE ORDER OF ONE PERCENT OF THE ANNUAL DOSE DUE TO NATURAL BACKGROUND.

10. TESTS OF ONE SAMPLE OF MILK FROM COWS WITHIN THE PATH OF THE LOW-LEVEL RADIOACTIVE PLUME APPEAR TO INDICATE THE PRESENCE OF RADIOACTIVE IODINE IN THE MILK. ALTHOUGH STILL HUNDREDS OF TIMES LOWER THAN THE LEVEL REQUIRING ANY EMERGENCY HEALTH PROTECTION MEASURES TO BE TAKEN. THESE TESTS ARE CURRENTLY BEING VERIFIED.

11. MEASUREMENTS INDICATE SOME REACTOR FUEL PROBABLY HAS FAILED. A VERY ROUGH CALCULATION INDICATES ABOUT 1 PERCENT OF THE FUEL ELEMENTS ARE PROBABLY LEAKING.

12. AS OF ABOUT NOON, MARCH 29, THE ECCS SYSTEM HAD BEEN SHUT DOWN AND DECAY HEAT WAS BEING REMOVED THROUGH ONE OF THE STEAM GENERATORS. COOLDOWN IS DELIBERATELY SLOW TO AVOID DAMAGE TO EQUIPMENT. RADIOACTIVE WATER WHICH HAD BEEN EXPOSED TO THE ATMOSPHERE WITHIN AN AUXILIARY BUILDING HAS BEEN PUMPED INTO A CLOSED TANK. THIS WAS EXPECTED TO REDUCE THE OFFSITE DOSES EMANATING FROM THE PLANT VENTILLATION SYSTEM. SURVEYS TO CONFIRM THIS REDUCTION WERE BEING CONDUCTED.

13. PLEASE NOTE THAT THE ABOVE IS PRELIMINARY INFORMATION.  
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ACTION PRECEDENCE CONTINUED:

IMMEDIATE HELSINKI  
 IMMEDIATE LONDON  
 IMMEDIATE MADRID  
 IMMEDIATE MANILA  
 IMMEDIATE MEXICO CITY  
 IMMEDIATE NEW DELHI  
 IMMEDIATE PARIS  
 IMMEDIATE RIO DE JANEIRO  
 IMMEDIATE ROME  
 IMMEDIATE SEOUL  
 IMMEDIATE STOCKHOLM  
 IMMEDIATE TEHRAN  
 IMMEDIATE TEL-AVIV  
 IMMEDIATE THE HAGUE  
 IMMEDIATE TOKYO  
 IMMEDIATE VIENNA

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