IMMEDIATE ATHENS, BERN IMMEDIATE, BOMBAY IMMEDIATE, BOHN IMMEDIATE, BRASILIA IMMEDIATE, BRUSSELS IMMEDIATE, COPENHAGEN IMMEDIATE

USIAEA, USOECD, USEEC

E.O. RELEASE: N/A

TAGS: TECH

SUBJECT: NUCLEAR POWER PLANT EMERGENCY SITUATION

REF: STATE 075566 A-021

1. PLEASE PASS FOLLOWING INFORMATION TO NRC CONTACTS AND TO ASSISTANT SECRETARY BERGOLD IN PARIS, ADAP, AND USE AT YOUR DISCRETION IN ANSWERING INQUIRIES. INFORMATION IS PRELIMINARY, NOT YET FULLY EVALUATED.

2. PLANT STATUS AS OF EARLY MARCH 30. THREE MILE ISLAND UNIT 2 CONTINUING TO REMOVE DECAY HEAT THROUGH A-LOOP STEAM GENERATOR USING ONE REACTOR COOLANT PUMP IN THAT LOOP FOR COOLANT CIRCULATION. THE REACTOR COOLANT PRESSURE AND TEMPERATURE WERE STABLE AND UNDER CONTROL THROUGHOUT THE NIGHT OF MARCH 29. THERE HAS BEEN SOME DIFFICULTY IN MAINTAINING COOLANT LETDOWN FLOW DUE TO RESISTANCE IN THE PURIFICATION FILTERS. THE LICENSEE NOTIFIED NRC AT ABOUT 00:40 P.M. ON MARCH 29 THAT THEY EXPECTED TO REMAIN IN THIS COOLING MODE FOR AT LEAST 24 HOURS.

3. THE LICENSEE'S ENGINEERING STAFF WAS REQUESTED BY NRC TO OBTAIN A BETTER ESTIMATE OF THE VOLUME OF THE
NONCONDENSIBLE "BUBBLES" IN THE REACTOR COOLANT SYSTEM. THERE ARE APPARENTLY TWO SUCH BUBBLES ONE IN THE PRESSURIZER THAT HAS BEEN INTENTIONALLY ESTABLISHED FOR CONTROL OF PRESSURE AND LEVEL, AND ONE IN THE REACTOR VESSEL HEAD CAUSED BY THE ACCUMULATION OF NONCONDENSIBLE GASES FROM FAILED FUEL AND RADIOLYTIC DECOMPOSITION OF WATER. THE VOLUME OF THE BUBBLE IN THE REACTOR VESSEL IS OF INTEREST IN ASSURING THAT SUFFICIENT VOLUME REMAINS IN THE UPPER HEAD FOR COLLECTION OF MORE NONCONDENSIBLE GASES ARISING FROM CONTINUED OPERATION IN THE PRESENT COOLING MODE AS WELL AS TO ASSESS THE POTENTIAL FOR MOVEMENT OF THE BUBBLE DURING A SWITCHOVER TO DECAY HEAT REMOVAL OPERATION.

4. THE LICENSEE BELIEVES IT IS PRUDENT TO REMAIN IN THE PRESENT COOLING MODE DUE TO THE POTENTIAL FOR LEAKAGE OF HIGHLY RADIOACTIVE COOLANT FROM THE DECAY HEAT REMOVAL SYSTEM INTO THE AUXILIARY BUILDING. MOVEMENT OF NONCONDENSIBLE GASES INTO THE REACTOR COOLANT LOOP, AND BOILING IN THE CORE WHEN THE REACTOR COOLANT PUMP IS SHUT DOWN.

5. FUEL DAMAGE
PRELIMINARY ASSESSMENT OF THE EXTENT OF FUEL DAMAGE FROM A REACTOR COOLANT SAMPLE TAKEN AT APPROXIMATELY 3:00 P.M. ON MARCH 29 INDICATES SIGNIFICANT RELEASES OF ISOBUTANE AND NOBLE GASES FROM THE FUEL. A 500 MILILITER SAMPLE TAKEN FROM THE PRIMARY COOLANT SYSTEM VIA A LETDOWN LINE WAS MEASURED AT ABOUT 1,000 R/YR ON CONTACT WITH 60 R/YR AT ONE FOOT AND 60 R/YR AT THREE FEET. PRELIMINARY ANALYSIS OF A DILUTED SAMPLE IN THE NRC MOBILE LABORATORY INDICATED PSEUDOPRODUCT CONCENTRATIONS OF ABOUT 125 MICROEYES PER MILILITER. THE SAMPLE WILL BE FLOWN TO BETSIE LABORATORY FOR FURTHER ANALYSIS.

7. REACTOR COOLANT SYSTEM (RCS) PARAMETERS

THE RCS PARAMETERS HAVE REMAINED RELATIVELY STABLE DURING THE PERIOD. GRADUAL RCS COOLDOWN CONTINUED TO ABOUT 1:30 A.M., MARCH 30, WHEN TEMPERATURE WAS SLIGHTLY INCREASED TO ALLOW ADDITIONAL MARGIN BETWEEN RCS OPERATING PARAMETERS AND TECHNICAL SPECIFICATION MINIMUM PRESSURIZATION LIMITS. FOLLOWING ARE THE SYSTEM PARAMETERS AT 8 A.M., MARCH 30:

- PRESSURIZER LEVEL (INCHES): 254
- PRESSURIZER PRESSURE (PSI): 3033
- PRESSURIZER TEMPERATURE (F): 657

LOOP A CORE
- INLET TEMPERATURE (F): 274
LOOP B CORE
- INLET TEMPERATURE (F): 274

8. ENVIRONMENTAL STATUS

TWO AERIAL SURVEYS WERE CONDUCTED DURING THE EVENING OF MARCH 29. THE FIRST FLIGHT WAS MADE ABOUT 6:30 P.M., DURING WHICH MEASUREMENTS WERE TAKEN ON A CIRCLE AROUND THE SITE WITH A RADIUS OF ABOUT EIGHT MILES. NO DEFINED PLUME OF RADIOACTIVITY WAS DETECTED, BUT RESIDUAL POCKETS OF RADIOACTIVITY WERE IDENTIFIED AT VARIOUS POINTS WHERE THE MEASURED LEVELS RANGED FROM 100 TO 300 MILLIREMIGENS PER HOURS. NATURAL BACKGROUND LEVELS ARE ABOUT 600 TO 600 MILLIREMIGENS PER HOUR. DURING THE SECOND FLIGHT, AT ABOUT 10:30 P.M., A PLUME WAS DETECTED NORTHWEST OF THE PLANT WITH A WIDTH EQUAL TO AND CONFINED WITHIN THE BOUNDARIES OF THE RIVER. MEASUREMENTS AT THE EAST SHORELINE OF THE RIVER, OPPOSITE MILL ISLAND INDICATED ABOUT 1 MILLIREMIGEN PER HOUR AND AT THE SHORELINE ON MILL NORTH OF MILL ISLAND HE-00 ALSTEAD AIR FORCE BASE ABOUT ONE MILLIREMIGEN PER HOUR. ADDITIONAL MEASUREMENTS AT FIVE MILES FROM THE PLANT WERE ON THE ORDER OF 0.1 TO 0.2 MILLIREMIGENS PER HOUR AND ARE IN AGREEMENT WITH THE EARLIER FLIGHT.

9. DURING THE EARLY MORNING HOURS OF MARCH 30, AN NRC MONITORING TEAM TOOK RADIATION MEASUREMENTS FROM A VEHICLE TRAVELING BOTH SIDES OF THE SUSQUEHANNA RIVER FROM 10 MILES SOUTH OF THREE MILE ISLAND TO 4 MILES NORTH. RADIATION LEVELS WERE HIGHEST NEAR CLY, A COMMUNITY JUST SOUTH OF THE FACILITY ON THE WEST SIDE OF THE RIVER. THE LEVEL AT CLY WAS 0.2 MILLIREMIGEN PER HOUR. ALL OTHER LOCATIONS HAD LEVELS LESS THAN 0.1 MILLIREMIGENS PER HOUR.

10. OTHER INFORMATION

APPROXIMATELY 4:30 P.M., MARCH 30, TWO EMPLOYEES OF THE PLANT WERE TAKEN TO THE HOSPITAL. THE CONDITION OF BOTH EMPLOYEES IS NOT LIFE THREATENING.

UNCLASSIFIED
METROPOLITAN EDISON CO. RECEIVED RADIATION EXPOSURES IN EXCESS OF THE QUARTERLY LIMIT OF 3 REMS. THE EMPLOYEES, AN OPERATOR AND A CHEMIST, ENTERED THE AUXILIARY BUILDING TO COLLECT A SAMPLE OF PRIMARY COOLANT. PRESENT ESTIMATES ARE THAT THE OPERATOR RECEIVED 2.1 REMS AND THE CHEMIST 3.4 REMS.

II. THE LICENSEE RELEASED LESS THAN 20,000 GALLONS OF SLIGHTLY CONTAMINATED INDUSTRIAL WASTES ON MARCH 29, 1979. THIS RELEASE WAS TERMINATED AT NRC REQUEST AT APPROXIMATELY 6:00 P.M. MARCH 29, 1979; BECAUSE OF CONCERNS EXPRESSED BY STATE REPRESENTATIVES. AT ABOUT 12:15 A.M. ON MARCH 30, NRC GAVE THE LICENSEE PERMISSION TO RESUME RELEASES OF THE SLIGHTLY CONTAMINATED INDUSTRIAL WASTES TO THE SUSQUEHANNA RIVER. THIS ACTION WAS COORDINATED WITH THE OFFICE OF THE GOVERNOR OF PENNSYLVANIA AND A PRESS RELEASE WAS ISSUED BY THE STATE.

III. AT 8:43 A.M., ON MARCH 30 THE LICENSEE BEGAN VENTING FROM THE GASEOUS WASTE TANKS.

IV. STATUS OF 8 P.M., MARCH 30:


INTERRUPTING COOLANT FLOW WITHIN THE REACTOR WHEN ITS PRESSURE IS FURTHER DECREASED AND THE CONTAINED GASES EXPAND. SEVERAL OPTIONS TO REACH A FINAL SAFE STATE FOR THE FUEL ARE UNDER CONSIDERATION. IN THE MEANTIME, THE REACTOR IS BEING MAINTAINED IN A STABLE CONDITION.
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