

U.S. NUCLEAR REGULATORY COMMISSION  
OFFICE OF INSPECTION AND ENFORCEMENT

Region I

NOTICE

Report No. 50-245/78-29  
50-336/78-24

Docket No. 50-245  
50-336

License No. DPR-21  
DPR-65

Priority --

Category C

AS OF 23 OCT 1978  
REGION I HAS NOT OBTAINED PROPRIETARY  
CLEARANCE IN ACCORDANCE WITH 10 CFR 2790

Licensee: Northeast Nuclear Energy Company

P. O. Box 270

Hartford, Connecticut 06101

Facility Name: Millstone Nuclear Power Station, Units 1 and 2

Inspection at: Waterford, Connecticut

Inspection conducted: July 23-28, and August 14-18, 1978

Inspectors: *J. T. Shedlosky*  
J. T. Shedlosky, Reactor Inspector

10/2/78  
date signed

date signed

date signed

Approved by: *E. C. McCabe Jr*  
E. C. McCabe, Jr., Chief, Reactor Projects  
Section No. 2, RO&NS Branch

10/2/78  
date signed

Inspection Summary:

Inspection on July 23-28 and August 14-18, 1978 (Combined Report Nos. 50-245/78-29 and 50-336/78-24)

Areas Inspected: Routine, unannounced inspection of plant operations including direct observation of activities, and inspections of the Unit 2 turbine building, auxiliary building, control room, and portions of the enclosure building, followup of LER 50-336/78-16, review of the licensee's handling of Bulletins and Circulars, and the implementation of the plant fire protection program. This inspection was commenced outside of normal working hours on Sunday, July 23, 1978. The inspection involved 66 inspector-hours on site by one NRC regional based inspector.

Results: No items of noncompliance were identified; one Deviation was identified at Unit 2 concerning a conflict between Article 7.3.1.2.1 of the FSAR which establishes a commitment to IEEE 279-1971 and a design feature of the Engineered Safety Features Actuation System.

Region I Form 12  
(Rev. April 77)

7812110 316

## DETAILS

### 1. Persons Contacted

The below listed technical and supervisory level licensee personnel were contacted:

- R. Brisco, General Services Supervisor
- R. Burnside, Shift Supervisor
- J. Crockett, Engineer
- L. Crosse, Shift Supervisor
- F. Dacimo, QA Supervisor
- \*E. C. Farrell, Unit 2 Superintendent
- E. R. Foster, Unit 1 Superintendent
- \*R. Herbert, Operations Supervisor
- R. Johnson, Assistant to Operations Supervisor
- J. Kelley, Operations Supervisor
- J. Moffatt, Assistant to Operations Supervisor
- E. J. Mroczka, Superintendent Plant Services
- \*J. Opeka, Station Superintendent
- C. Parr, Shift Supervisor
- T. Piascik, Reactor Engineer
- R. Place, Maintenance Supervisor
- P. Przekop, Engineer
- W. Romberg, Engineering Supervisor
- J. Roncaioli, Engineer MUSCO
- S. Scace, Operations Supervisor
- C. Shine, Shift Supervisor
- J. Stetz, Engineer
- F. Teeple, Instrument and Control Supervisor

\* denotes those present at the exit interview.

### 2. Review of Plant Operations - Plant Inspections (Unit 2)

This inspection was commenced off normal working hours on Sunday, July 23, 1978. During that period, the inspector reviewed control room activities during plant routine power operations. The inspector also reviewed the status and readiness of the plant security systems. No unacceptable conditions were identified.

Inspections were conducted of the control room, auxiliary building, turbine building, and portions of the enclosure building. During this inspection, activities in progress were normal plant power operations and surveillance testing. The inspector observed operations in the control room including shift turnovers and second shift operations. Inspections were made of fire protection equipment and fire barriers.

a. Instrumentation

Control room process instruments were observed for correlation between channels and for conformance with technical specification requirements. No unacceptable conditions were identified.

b. Annunciator Alarms

The inspector observed various alarm conditions that were received and acknowledged. These conditions were discussed with shift personnel, who were knowledgeable of the alarms and actions required. During plant inspections, the inspector observed the condition of equipment associated with various alarms. No unacceptable conditions were identified.

c. Shift Manning

The operating shift was observed to be staffed to meet the operating requirements of Technical Specifications section 6 both to the number and type of licenses. Control room and shift manning was observed to be in conformance with the Technical Specifications and site administrative procedures.

d. Radiation Protection Control

Radiation protection control areas in the turbine building and the reactor building were inspected. Radiation Work Permits in use were reviewed and compliance with those documents as to protective clothing and required monitoring instruments was inspected. There were no unacceptable conditions identified.

e. Plant Housekeeping Conditions

Storage of material and components was observed with respect to prevention of fire and safety hazards. Plant housekeeping was evaluated with respect to controlling the spread of surface and airborne contamination. There were no unacceptable conditions identified.

f. Fire Protection/Prevention

The inspector examined the condition of selected pieces of fire fighting equipment. Combustible materials were being controlled and were not found near vital areas. Selected cable penetrations were examined and their fire barriers were found intact.

g. Control of Equipment

During plant inspections, selected equipment under safety tags were examined. Equipment conditions were consistent with information in control room logs.

h. Instrument Channels

Instrument channel checks were reviewed on routine logs. An independent comparison was made of selected instruments. No unacceptable conditions were identified.

i. Equipment Lineups

The inspector examined breaker positions on all switchgear and motor control centers in accessible portions of the turbine and reactor buildings. Equipment conditions were found in conformance with Technical Specification and operating procedure requirements.

3. Review of Plant Operations - Logs and Records (Unit 2)

The inspector reviewed the records listed below. The review was governed by the Technical Specifications and Administrative procedure requirements.

- Shift Supervisor's Log, May 20 through July 28, 1978.
- Plant Incident Reports, 78-1 through 78-88.

Several entries in these logs were the subject of additional review and discussion with licensee personnel. These included: the damage sustained by containment tendon 1021 during surveillance testing on April 13, 1978. This event has been reported to the NRC Region I by letter dated August 4, 1978, serial MP-2-951. The inspector reviewed the cause and corrective actions described in the referenced letter. These appear to be appropriate; the inspector had no additional questions concerning this event.

Other events which were described in log entries and led to additional inspection activities included: high airborne radiation unit 2 stack on April 19, 1978, at 1005; the failure of the A emergency diesel generator jacket cooling water pump motor on May 5, 1978; degasifier tube leaks resulting in the contamination of its auxiliary steam system on May 19, 1978, at 1555; a ramp increase in pressurizer pressure to 2300 psia on May 31, 1978, at 0240; and metal chips in the A-HPSI pump motor bearing found on July 21, 1978, at 1500. The inspector discussed these events with licensee personnel and reviewed additional operating data. The inspector had no further questions at this time; no unacceptable conditions were identified.

4. Followup of Reportable Occurrence 50-336/78-16 (Unit 2)

On July 26, 1978, the licensee identified and reported a number of instances since May 1, 1978, in which the licensee concluded that a Limiting Condition for Operation (LCO) had been exceeded as a result of containment purging with the reactor at power and a Containment Radiation High trip present but overridden by operator action.

Either the Containment Radiation High signal or the Containment Isolation actuation signal will normally provide automatic closure of the 48 inch diameter isolation valves used for purging. Cycling the manual control switch for these valves to the Close position and then to the Open position overrides the automatic closure feature for both signals and opens the valves. The override remains in effect as long as either the Containment Radiation High signal or the Containment Isolation Actuation signal is present, preventing automatic valve closure. The table at the end of this paragraph tabulates the instances and durations of valve openings at power with automatic closure overridden. Each of these instances represents a case of failure to be able to respond to an automatic closure signal, not a case of actual failure to respond. No radioactive material discharge limits were exceeded during the purging operations.

At the time of the purges, the containment radiation monitors were tripped due to radiation from small steam leaks inside the containment. Purging was accomplished to reduce radiation levels so that containment entries could be made for routine surveillance testing without realizing that the Containment Isolation Actuation signal was also overridden by the action of opening the purge valves. Recognition that the override condition resulted in a loss of containment integrity (the inability of the purge valves to close in response to a Containment Isolation Actuation signal) followed a procedure review after an operator questioned whether purging was permitted in these conditions. The corrective action then taken was to close and tag the purge valves, deenergize valve control power, and modify the governing procedure to prohibit purging with either protective signal present.

The inspector reviewed Operating Procedure 2314 B, Revision 2, Changes 1 through 5, dated July 20, 1978. The procedure, which was properly approved and issued, was deficient because even though it required obtaining a containment air sample prior to purging, it did not consider all of the LCOs contained in the Technical Specifications. In particular, the procedure failed to include a discussion of the overriding of protective signals and that overriding using the purge valve manual control switch would override the Containment Radiation High signal and the Containment Isolation Actuation

signal. Revision of the operating procedure (OP 2314 B, Revision 3, August 9, 1978) incorporated a description of considerations relating to the use of the override feature and prohibits its use for purging during power operation, startup, hot standby, or hot shutdown. Management permission is required for purging during cold shutdown or refueling.

Technical Specification requirements for the signals involved include the following:

- LCO 3.3.2.1 requires that the "Containment Radiation High" channel be operable. The associated action statement permits operation to continue with the channel inoperable, if the purge valves are maintained closed. In this case, the isolation function of the Containment Radiation High Channel within the purge valve control system was overridden by operator action using the override capability of the purge valve manual control switch.
- LCO 3.6.3.1 requires that the containment isolation valves, including the purge valves, be operable. The associated action statement requires that an inoperable valve must be restored to operable status or isolated within 4 hours, or that the plant be placed in cold shutdown within the next 36 hours.
- LCO 3.6.1.1 requires that containment integrity be maintained during operation. Open purge valves incapable of automatic closure do not provide containment integrity as defined in Definition 1.8. The associated action statement requires restoration of containment integrity within one hour or placing the plant in cold shutdown within the next 36 hours.
- LCO 3.3.3.1.b requires that the containment atmosphere monitoring channels be operable. The associated action statement requires containment air sampling and analysis at least once every 24 hours, or use of a constant air monitor, if one or more containment atmosphere monitor channels are inoperable.
- LCO 3.0.3 requires that, if circumstances in excess of the Limiting Conditions for Operations exist, the facility be placed in cold shutdown within 30 hours. It also provides for resuming operations once the exceeding of a Limiting Condition for Operation is corrected.
- Definition 1.6 defines operability as the capability of performing the intended functions, and Definition 1.8 defines containment integrity as including that all penetrations be either capable of being closed by an operable automatic system or are closed by manual valves, flanges or deactivated automatic valves.

In this case, the most restrictive envelope specified is restoration of containment integrity within one hour or establishment of cold shutdown within the next 36 hours, a total time interval of 37 hours. The maximum continuous duration of purging was 31 hours. Based on actions at the time licensee personnel became aware that they had unknowingly entered into an LCO action statement, report timeliness and the immediate corrective actions taken were acceptable, and licensee actions did not involve noncompliance.

The licensee is committed by his FSAR (Amendment 39, Art 7.3.1.2.1) to compliance with IEEE 279-1971, "Criteria for Protection Systems for Nuclear Power Generating Stations". Section 4.13 of that standard states: "If the protective action of some part of the system has been bypassed or deliberately rendered inoperative for any purpose, this fact shall be continuously indicated in the control room". Section 4.14 states: "The design shall permit the administrative control of the means for manually bypassing channels or protective functions." In this case, NRC review of the circuitry showed that the licensee indicators in the control room indicate the valve position but do not provide continuous indication that the valves have been rendered inoperable by the overriding of their automatic closure signal. This is a Deviation.

The licensee evaluated other Engineered Safeguards Systems and components and determined that similar situations occur with the steam generator blow-down isolation valves which are shut by a steam generator secondary side radiation monitor trip or a Containment Isolation Actuation signal. Also an Enclosure Building Filtration Actuation signal or Auxiliary Exhaust Actuation signal will startup or align the following components:

- Enclosure Building Filtration Fans (2)
- Control Room Filter Fans (2)
- Fuel Handling Area to Plenum Dampers (2)
- Steam Jet Air Ejector MOV's (2)
- Enclosure Building Fan Suction Dampers (2)
- Enclosure Building Plenum Isolation Dampers (2)
- Containment Cleanup Isolation Dampers (2)

The above components appear to be additional examples of a Deviation from IEEE-279.

The following table shows the times when the containment purge valves appear to have been overridden open. This information was obtained from the plant discharge log.



Date	Release Point (Unit 1 Stack, or Unit 2 Vent)	Duration	
		Hours	Minutes
5/1/78	2	0	10
5/3-4	1	11	5
5/4-5	1	12	5
5/9/-10	1	9	55
5/10-11	1	31	0
5/15	1	0	50
5/25	1	0	10
5/26-27	1	12	5
5/27	1	16	25
5/27-28	2	25	30
6/1	1	0	5
6/2-3	1	12	15
6/3	1	4	0
6/3-4	2	19	15
6/4-5	2	19	15
6/9	1	6	25
6/28	2	0	10
7/17	1	0	5

Total time 180 hours 40 minutes

#### 5. Hydrogen Delivery Truck Fire

During the delivery of a truck shipment of hydrogen, a fire started at the delivery truck at 1306, on August 11, 1978. The truck was on the site but outside the protected area. The fire was confined to the rear of the truck and three automobiles parked nearby. There was no damage to plant equipment and there were no personnel injuries.

Records on site indicate that at 1300, on August 11, 1978, a New England Oxygen Company truck with Massachusetts registration A/C 21-124 arrived to recharge the on site hydrogen storage bank. The truck trailer was filled with 10 cylinders of hydrogen charged to 2500 psig for a total delivery of 114,757 scf. At 1306 an explosion and resulting fire occurred. Immediately before the explosion a security guard noted the sound of a gas leak from the rear of the truck. At 1310 a call was made for assistance to the Town of Waterford Fire Department. The Fire Department arrived on site at 1315. The Connecticut State Police and the NRC were informed at

1320 and 1323, respectively. The fire was out at 1415 following the discharge of all 10 hydrogen cylinders through safety valves. The Waterford Fire Department left the site at 1845. The truck trailer was towed from the site at 2130 and the trailer was loaded on a flatbed truck and removed at 0330 on August 12, 1978. The inspector reviewed plant records and interviewed personnel. No deficiencies in the implementation of the site Emergency or Fire Protection plan were noted.

The inspector reviewed OP 501/2501, Emergency Plan Procedure, Revision 13, dated June 8, 1978, OP 505/2511, Emergency Procedure - Fire, Revision 3, dated July 26, 1978, OP 314, Revision 4 Change 4, dated April 3, 1978, paragraph 7.5, Hydrogen Shaft Seal Oil System, and paragraph 7.7, Generator Hydrogen Gas Control System and plant design prints G-187545 (page 42), G-187519, and G-187546.

The inspector examined the on site storage and distribution system. The on site storage is divided into two banks, a normal and a backup bank. The normal bank consists of 16 cylinders with a capacity of 96,000 scf at 2500 psig. The backup bank consists of 2 cylinders with a capacity of 4,000 scf. Individual pressure regulators at a reducing station supplying a distribution header are adjusted to 85 psig and 65 psig for the normal and backup banks, respectively. The backup bank normally remains at 2500 psig. Hydrogen is used from the normal bank; pressure is allowed to swing between 2500 psig down to 800 psig. The banks are recharged about every ten days. Unit main generator casings are pressurized to about 45 psig through reducing stations which are normally in service and are supplied from the 85 psig distribution header. The inspector examined these stations and the distribution piping in the Unit 1 and 2 turbine buildings. The distribution headers are generally enclosed in a vented guard pipe. The metering and reducing stations and distribution piping is marked as containing hydrogen. The storage bank safety valves (3800 psig) are directed away from vital equipment. However, the storage cylinders and main reducing

and recharging station is about 100 feet away from emergency diesel generator, gas turbine generator, and heating boiler fuel oil storage tanks and transfer pumps. Bulk liquid chlorine (21,300 gallons liquid) is also stored near the fuel oil storage tanks. The licensee has initiated an Engineering Work Request to study the possibility of relocating the hydrogen storage banks charging connection or the entire storage banks to a new remote location.

The inspector stated that administrative controls should be developed to cover the delivery truck path through the protected area and the allowed orientation of the truck during deliveries. This is an open item (245/78-29-01).

The Waterford Fire Department (WFD) recommended the installation of an additional fire hydrant at the access to the wildlife area. Representatives of the WFD and Northeast Utilities Service Company observed a subsequent recharge of the station hydrogen banks.

The inspector had no additional questions at this time.

6. NRC Bulletins and Circulars (Units 1 and 2)

The inspector reviewed the action taken on the following NRC Bulletins and Circulars. In each case the inspector found that a member of the plant staff had been assigned responsibility for the specified reviews and analysis. Plant administrative controls were used to track the engineering review and implementation of any required actions.

a. Bulletin 77-01, Pneumatic Time Delay Relay Setpoint Drift (Unit 1)

The licensee has had a surveillance and calibration program developed and has implemented the program during the last refueling outage. The program has established acceptable setpoints for the relays time delay feature, and have placed the relays in a cyclic surveillance test program.

b. Bulletin 77-02, Potential Failure Mechanism in Certain Westinghouse AR Relays with Latch Attachments (Unit 1)

As stated in the licensee's response, although Westinghouse Type AR relays are used at the station in high speed relaying schemes, the station does not use the latching Type AR relay.

c. Bulletins 77-05, 5A, Electrical Connector Assemblies

Unit 1 - The licensee responded that no electrical connectors of any type were used in accident mitigating systems and subject to accident conditions. During an NRC inspection (50-245/78-10 of March 22-28, 1978), it was found that cable splices were used in conjunction with accident mitigating systems at the containment penetrations. There were no records available concerning the environmental qualifications of these cable splices. The plant had subsequently replaced those splices with a splice for which qualification data was available. This action has been reviewed during an additional inspection (50-245/78-27 of July 18-19, 1978).

This topic will be reviewed during future inspections following up NRC Circular 78-08, Environmental Qualification of Safety Related Electrical Equipment. Inspection 50-245/78-31 and 50-336/78-27 of August 1 and 2, 1978, was the initial inspection in this area.

Unit 2 - The licensee reported that the only electrical connectors, associated with safety systems, exposed to a post LOCA environment are 16 coaxial connectors associated with eight power range nuclear detectors. Electrical connections at containment penetrations are made inside of the penetration enclosure. This area will be reviewed during the followup of NRC Circular 78-08.

d. Bulletin 77-06, Potential Problems with Containment Electrical Penetration Assemblies

Unit 1 - The plant was built with GE types NS02, NS03, and NS04 containment penetrations. These penetrations were qualified to a post LOCA containment environment. This area will be reviewed during the followup of NRC Circular 78-08.

Unit 2 - The problem with electrical failures in penetrations first occurred at Millstone Unit 2. This event has been reviewed during NRC inspections 50-336/77-29 on November 16-18, 1977, 50-336/77-33 on December 19, 1977, 50-336/78-2 on January 3-6, 1978, 50-336/78-07 on February 15-17, 1978, and 50-336/78-08 on April 13-20, 1978. This area will be reviewed during the followup of NRC Circular 78-08.

- e. Bulletin 77-08, Assurance of Safety and Safeguards During an Emergency - Locking Systems (Units 1 and 2)

The inspector reviewed the licensee's response to this Bulletin. Discussions were conducted with plant personnel and records were reviewed.

- f. Bulletin 78-1, Flammable Contact - Arm Retainers in GE CR120A Relays (Units 1 and 2)

The licensee has developed and implemented a program replacing all Celcon contact arm retainers with Valox parts.

- g. Bulletin 78-2, Terminal Block Qualification (Units 1 and 2)

The licensee's survey and analysis found no unprotected terminal blocks on safety related systems required to function in the post LOCA environment.

- h. Bulletin 78-3, Potential Explosive Gas Mixture Accumulations Associated with BWR Off Gas System Operations (Unit 1)

This bulletin was issued as the result of hydrogen explosions at Unit 1 on December 13, 1977. The licensee's corrective action was detailed in letters dated December 22, 1977, December 27, 1977, and April 21, 1978. These actions were reviewed during NRC inspections 50-245/77-33 on December 13-23, 1977, and 50-245/78-10 on March 22-28, 1978. The inspector had no additional questions in this area.

- i. Bulletin 78-04, Environmental Qualification of Certain Stem Mounted Limit Switches in Reactor Containment (Units 1 and 2)

The licensee has determined that NAMCO type D2400X or EA-170-302 Snap Lock switches are not utilized in safety related applications inside primary containment. This item will be addressed during the followup of NRC Circular 78-08.

- j. Bulletin 78-05, Malfunctioning of Circuit Breaker Auxiliary Contact Mechanism - General Electric Model CR105X (Units 1 and 2)

As reported by the licensee, the GE CR105X auxiliary contact mechanism is not used at Unit 2. This mechanism is used in Unit 1 controllers and the problems described in the circular were experienced during plant startup testing. When this problem was discovered the armatures of these devices were removed and polished to remove any surface imperfections. A review of plant maintenance actions indicates that the GE CR105X contactors have operated properly for at least the last two years. The inspector had no additional questions at this time.

- k. Bulletin 78-06, Defective Cutler-Hammer Type M Relays with DC Coils (Units 1 and 2)

As reported by the licensee, Cutler-Hammer Type M, DC relays, catalog number D23 MRD are not used at Units 1 or 2 in safety related systems. The inspector had no additional questions at this time.

- l. Bulletin 78-09, BWR Drywell Leakage Paths Associated with Inadequate Drywell Closures (Unit 1)

This Bulletin was issued as a result of an event at Unit 1 during the Fall 1976 refueling outage. The corrective actions discussed by the licensee in the response to Bulletin 78-09 were also addressed during previous inspections (50-245/78-09 on March 17-22, 1978, and 50-245/78-25 on June 21-23, 1978). The licensee will verify drywell head and manway closure tightness procedures during the next CILRT in 1979. This issue will be addressed during future inspections of CILRT procedure preparation and of test performance.

m. Circular 77-05, Fluid Entrapment in Valve Bonnets (Unit 1)

The inspector reviewed the results of the licensee's analysis. Twelve split or double disc valves were identified; six of which are located in the recirculation system and six in the feedwater system. All valves are subject to temperature change during operation. The licensee found that all valves had been installed in positions to prevent the accumulation of fluids in valve bonnets. The inspector had no additional questions at this time.

n. Circular 77-09, Improper Fuse Coordination in BWR Standby Liquid Control Circuits (Unit 1)

The licensee had examined the fusing of the SLC circuit and found it as specified in the plant control wiring drawings and in conformance with the recommendations of Circular 77-09. The inspector independently verified this component usage.

o. Circular 77-10, Vacuum Conditions Resulting in Damage to Liquid Process Tanks (Unit 1)

The inspector discussed the details of a program implemented to address the concerns of this circular. All tanks were surveyed, and all were found to be adequately vented to prevent collapse during pump down. No tank was found which could cause an unmonitored release of radioactive material if it had failed. Additionally, the licensee has established a surveillance program to the condition to inspect plant tanks. That program will include nondestructive testing to determine wall thickness, liner integrity, and paint condition. The inspector had no additional questions at this time.

p. Circular 77-13, Reactor Safety Signals Negated During Testing (Unit 1)

The inspector reviewed the licensee's analysis of the material of this circular. BWR trip logic design and plant operating procedures are formulated so that testing is accomplished one channel of a trip system at a time and that channel is restored to an operable status prior to testing subsequent channels. This was confirmed by the inspector during a check of a random

sample of instrument surveillance procedures. The material of the circular was promulgated to the members of the I&C department. The inspector had no additional questions in this area.

q. Circular 77-14, Separation of Contaminated Water Systems from Noncontaminated Plant Systems (Unit 1)

The licensee conducted a study to identify interfaces between radioactively contaminated and clean systems. Two points were found. The condensate transfer pumps may take a suction on the condensate storage tank (CST) or the demineralized water storage tank (DWST). A check valve in the line from the DWST prevents contamination from the CST. As a result of the licensee's study, a manual isolation valve in that line was also locked shut. This was verified by the inspector. The second interface point is the house heating boiler surge tank emergency makeup from the domestic water system. A single manual valve isolates this line. The licensee has initiated a Plant Design Change Request (PDCR) to improve this situation. The inspector had no additional questions at this time.

r. Circular 77-15, Degradation of Fuel Oil Flow to the Emergency Diesel Generator (Unit 1)

The licensee has inspected the Emergency Diesel Generator fuel oil transfer system and has conducted a special surveillance test to measure fuel oil transfer rate. It was determined that the transfer occurred at at least 24 gpm. The diesel generator consumes 3.3 gpm at 110% rated power. The inspector had no additional questions at this time.

s. Circular 77-16, Emergency Diesel Generator Electrical Trip Lockout Features (Unit 1)

The licensee has reviewed the protective features for the unit Emergency Diesel Generator. Although the function of the protective features is in accordance with license conditions, differences were documented between the two Unit 2 Diesel Generators and the Unit 1 Diesel Generator. An Engineering Work Request has been initiated to investigate these differences. At Unit 1 a diesel shutdown occurs on: generator differential current, generator voltage restraint overcurrent, generator



reverse power, and generator loss of field. At Unit 2 diesel engine shutdown occurs on low lubricating oil pressure (2 out of 3 logic), engine overspeed, and generator differential current, output breaker is tripped on generator voltage restraint overcurrent. The inspector had no additional questions at this time. The results of the EWR will be reviewed when completed.

t. Circular 78-02, Proper Lubricating Oil for Terry Turbines (Units 1 and 2)

Unit 1 - There are no Terry Steam Turbines in use at Unit 1. The licensee reviewed the lubricating oil usage for the fire water pump diesel engine with the vendors involved. The unit was being lubricated with Mobil Guard 412 then 443. The unit is presently being lubricated with Mobil Guard 445, which meets the vendors' recommendations.

Unit 2 - The auxiliary feedwater pump Terry Turbine governor is lubricated with Mobil Vaportec Light. This meets the vendors' recommendations.

u. Circular 78-03, Packaging Greater than Type A Quantities of Low Specific Activity Radioactive Material for Transport (Unit 1 and 2)

The licensee's procedures for handling LSA material cause the waste to be segregated. This allows for the scheduling of a certified shipping cask when needed. It is the licensee's position that he is complying with 10 CFR 71.12. This item will be reviewed during future NRC inspections.

v. Circular 78-04, Installation Errors that Could Prevent Closing of Fire Doors (Units 1 and 2)

The licensee determined that neither sliding fire doors nor Mesker D and H Pyromatic door closers are used at the plant. The inspector had no further questions.

w. Circular 78-05, Inadvertent Safety Injection During Cooldown (Unit 2)

The nuclear steam supply system emergency safeguard actuation system does not use the Main Steam Line pressure low signal. The only actuation during cooldown is pressurizer pressure low. Annunciators alert the control room operator at 150 psi above the actuation point. This allows the pressurizer pressure low input signal to be bypassed. By procedure it is not normal to cool down by using steam dumps.

x. Circular 78-06, Potential Common Mode Flooding of ECCS Equipment Rooms at BWR Facilities (Unit 1 and 2)

Unit 1 - Each ECCS equipment room (corner room) has its own sump which is isolated from other sumps and the torus area.

Unit 2 - Area drains from Engineered Safeguard Rooms A, B, and C are serviced by individual sumps with their own pumps. Back flooding through the common pump discharge header is prevented by check valves. Equipment drains are normally isolated and may be placed in service when the equipment is running.

7. Station Fire Protection Procedures (Units 1 and 2)

The inspector reviewed Training Department Lesson Plans, and draft station procedures implementing the Station Fire Protection Plan. As a guide the inspector used Regulatory Guide 1.120, "Fire Protection Guidelines for Nuclear Power Plants," Branch Technical Position 9.5-1, the "Haddam Neck Plant, Millstone Nuclear Power Station, Unit Nos. 1 and 2, Fire Protection System Administrative Controls," dated April 1978, and the Northeast Utilities Fire Protection Program for Nuclear Power Plants, dated June 2, 1978. The inspector determined that ACP-2.05, "Fire Protection Administration and Program," was being drafted using the above mentioned documents as a guide to the material to be included. The licensee plans to take credit for the fire fighters annual physical examination with the annual physical examination given to plant operations personnel. This exam includes a vital capacity test which is included as part of the radiological respiratory protection program. The Training Department lesson plan, dated January 1978, was reviewed.

That plan does address the topics of leadership as it relates to fire fighting operations, and critical factor analysis for fires, fire fighting action planning tactics for fire control, and coordination. This subject material is presented to the brigade leaders and all brigade members. Procedures to implement corporate level controls over the program are being drafted by the NUSCO Engineering Office. These procedures will be complete by January 1979. There were no unacceptable conditions identified.

8. Feedwater Pump Trip for Reactor Vessel High Water Level (Unit 1)

The licensee has addressed his position concerning this modification in a letter to NRR dated March 7, 1978. He intends to design and engineer this feature and install it during the 1979 refueling outage. The inspector had no additional questions at this time.

9. Reactor System Decontamination (Unit 1)

Information available to the inspector indicated that chemical decontamination solutions have not been used. The inspector had no additional questions at this time.

10. Failures of 125VDC Relays in Safety Related Motor Control Centers (Unit 1)

The inspector discussed a problem which had occurred at another power reactor concerning General Electric type IC2820A200-A3-E relays with coil number 3938-209-G3. These relays are not used in safety related Motor Control Centers at Unit 1.

11. Agastat Relay Seismic Locking Springs (Unit 1)

The inspector discussed a problem which had occurred at another power reactor concerning the lack of seismic locking springs on plug-in type Agastat Relays Model GPBC 757 and GPDG. These relays are not used in safety related circuits at Unit 1.

12. Slow Control Rod Scram Times (Unit 1)

The inspector discussed a problem which had occurred at another power reactor concerning exceptionally long scram times. These long scram times were due to the presence of water in the station

instrument air header. Information available to the inspector indicated that this control rod problem has never occurred at Unit 1. The plant also has never had water problems in instrument air headers. The inspector had no additional questions at this time.

13. Low Pressure Safety Injection (LPSI) Pump Impeller Locking System (Unit 2)

The licensee has reviewed the vendor's report which proposed an alternate method of locking the LPSI pump impellers. This would involve an impeller keyed to a washer and the washer locked to impeller nut. The original method is to torque a jam nut to 215 ft-lb then to torque a cap nut to 215 ft-lb. The vendor is confident that this original method of locking the impeller is satisfactory. He has provided an alternate method as one power plant experienced loosening of the impeller lock nut during initial preoperational testing. The licensee has discussed the problem with his vendor. It is his position to continue to use the original locking method. The inspector had no additional questions at this time.

14. Status of Previous Commitments to the NRC

The inspector received additional information to update previously made commitments.

- a. LER 336/78-6. The licensee requires additional materials prior to repositioning the heat tracing temperature element. He will not complete this work by his target date of September 1, 1978. The inspector received a new commitment date of November 1, 1978.
- b. LER 336/77-20. The licensee had committed to a modification consisting of an annunciator on the EDGs' fuel supply valves. This modification will be completed by December 1, 1978. The previous commitment date was September 1, 1978.
- c. NRC Inspection 50-336/78-06. The licensee clarified a commitment in the referenced inspection concerning the inspection of hydraulic shock suppressors of the plant equipment operators. That commitment is clarified to be a routine equipment check and not a checkoff of specific surveillance criteria addressing snubbers of equipment price number.

The inspector discussed this information with licensee representatives. There are no additional questions at this time. There were no unacceptable conditions identified.

15. Reactor Protection System Motor Generator Voltage Regulator

The licensee has implemented the surveillance program concerning RPS MG system voltage and frequency regulators described by letter from Dennis Ziemann, Chief, Operating Reactors Branch 2, DOR, NRR to Northeast Nuclear Energy Company, dated August 7, 1978. The Plant Equipment Operators' Log has been revised to include logging each RPS MG system output voltage and frequency once per shift. During the inspection the licensee was in the process of surveillance testing over voltage, under voltage and under frequency relays. The utility and his Nuclear Steam System Supplier were questioning the basis for establishing certain setpoints. This discussion was being handled directly with NRR.

16. Exit Interview

The inspector met with the licensee's representatives (denoted in paragraph 1) at the conclusion of the inspection. The inspector summarized the purpose and scope of the inspection and the findings.