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The Northeast Utilities System

March 8, 2001  
B18346

U.S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
Washington, DC 20555

Subject: Millstone Nuclear Power Station, Unit No. 1, Docket No. 50-245,  
10 CFR 50.59 Annual Report for 2000

Reference: Northeast Utilities' Letter B18128, "Millstone Nuclear Power Station, Unit No. 1;  
10 CFR 50.59 Annual Report for 1999," dated June 30, 2000.

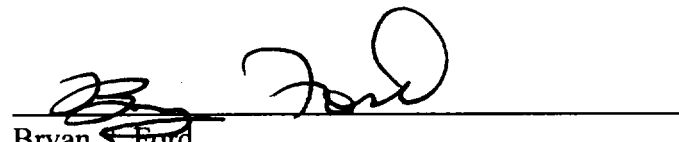
Pursuant to 10 CFR 50.59(b)(2), Northeast Nuclear Energy Company (NNECO) is submitting the Millstone Unit No. 1 10 CFR 50.59 Annual Report for 2000. Attachment 1 provides summaries for those safety evaluations approved in 2000. The previous 10 CFR 50.59 annual report was submitted on June 30, 2000. Complete copies of the Safety Evaluations are available at the Millstone Unit 1 site.

In addition, Attachment 2 contains a description of commitments that were changed during 2000 which warrant notification of the Nuclear Regulatory Commission (NRC) in the annual report per Nuclear Energy Institute (NEI) 99-04, "Guidelines for Managing NRC Commitment Changes."

If you have any questions regarding this submittal, please contact me at (860) 437-5895.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY



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4/10/01

# **Attachment 1 to B18346**

## **Millstone Unit 1**

### **Safety Evaluation Summaries**

Safety Evaluation Number: S1-EV-99-0027

Revision No.: 0

Subject: Carbon Dioxide Fire Protection System Abandonment and Related Document Changes

Description of the Activity

This Safety Evaluation evaluates the abandonment of the Carbon Dioxide (CO<sub>2</sub>) Fire Protection Systems protecting the Gas Turbine Enclosure and the Exciter Cubicle and related document changes.

Reason for the Activity

The subject CO<sub>2</sub> Fire Protection Systems protect equipment which is permanently out of service. The hazards associated with operation of this equipment no longer exist.

Safety Evaluation Summary

The subject CO<sub>2</sub> Fire Protection Systems are abandoned, because the hazards associated with the protected equipment have been removed. The CO<sub>2</sub> Fire Protection Systems were not designed to protect structures, systems, or components which could result in a radiological hazard during a fire. They are physically remote from areas involved in fuel handling operations. The abandonment of these CO<sub>2</sub> Fire Protection Systems cannot credibly influence any accidents or malfunctions. The proposed activity does not involve any unreviewed safety questions.

Safety Evaluation Number: S1-EV-99-0028

Revision No.: 0

Subject: Deluge Fire Protection System Abandonment and Related Document Changes

Description of the Activity

This Safety Evaluation evaluates the abandonment of the Deluge Systems protecting the Reactor Motor Generator (MG) Sets, the Turbine Lube Oil Room, the Hydrogen Seal Oil Unit, and the Turbine Bearings, including the respective fire detection systems, and the associated document changes. Additionally, the requirements in the Technical Requirements Manual regarding the Gas Turbine Manual Deluge are eliminated.

Reason for the Activity

The subject Deluge systems protect equipment which is permanently out of service. The hazards associated with operation of this equipment no longer exist.

Safety Evaluation Summary

The subject Deluge Fire Protection Systems are being abandoned, because the hazards associated with the protected equipment have been removed. The subject Deluge Fire Protection Systems are physically remote from areas involved in fuel handling operations. This activity cannot credibly influence any accidents or malfunctions. The proposed activity does not involve an unreviewed safety question.

Safety Evaluation Number: S1-EV-99-0029

Revision No.: 0

Subject: Area Radiation Monitoring Package

### Description of the Activity

The proposed change to the Millstone Unit No. 1 (MP1) Defueled Safety Analysis Report (DSAR) is composed of the following changes:

- Removal of Area Radiation Monitor (ARM) Station Number 4, New Fuel Storage, from DSAR Table 4.6-2, "Area Radiation Monitoring System Sensor and Converter Locations for Millstone Unit No. 1," because it is no longer required to warn of abnormal radiation levels in an area where no radioactive material is present, stored, handled or could be inadvertently introduced.
- Removal of statement, "A radiation monitor in the fuel storage vault provides warning of any radiation level increase" from DSAR Section 3.2.1.1.3, "New Fuel Storage - Safety Evaluation."

### Reason for the Activity

On November 22, 1999, Northeast Nuclear Energy Company (NNECO) permanently removed the remaining new fuel from site. On July 21, 1998, NNECO informed the Nuclear Regulatory Commission that MP1 had permanently ceased operations. Pursuant to 10 CFR 50.82(a)(2), the MP1 license has been modified to permanently withdraw the authority to operate the unit. No new fuel will ever be required or stored at MP1.

### Safety Evaluation Summary

The removal of ARM 4 from the DSAR does not represent an unreviewed safety question. The ARM 4's function is to warn of abnormal radiation levels in the new fuel storage area. This function is no longer required with the removal of all new fuel from MP1. The removal of ARM 4 from DSAR Table 4.6-2 and DSAR Section 3.2.1.1.3 and abandoning ARM 4 by installing boundary safety tags and performing final system alignments in accordance with approved procedures does not create any new malfunction.

The removal of ARM 4 from the DSAR sections and its abandonment could not increase the probability of occurrence of a fuel handling accident, because it is only used to warn of abnormal radiation levels in the new fuel storage area. The removal of ARM 4 does not introduce any new hazards or accident initiators that may create any accidents associated with fuel safety or radiological handling.

Safety Evaluation Number: S1-EV-99-0031

Revision No.: 0

Subject: Special Hazards Fire Protection System Abandonment and Related Document  
Changes

Description of the Activity

This Safety Evaluation evaluates the physical abandonment of the special hazards sprinkler systems, hose station HS-161, and related document changes.

Reason for the Activity

These sprinkler systems and hose station protect equipment which is either permanently out of service, or provides no safety function.

Safety Evaluation Summary

The special hazards sprinkler systems have been abandoned, because they either protect equipment that performs no safety function or the hazards posed by operation of the protected equipment have been eliminated. HS-161 has been abandoned, because the principal hazard is no longer in service. The subject fire suppression systems are physically remote from fuel handling operations. This activity cannot credibly influence any accidents or malfunctions, and it will not increase radiological hazards resulting from a fire. The proposed activity does not involve an unreviewed safety question

Safety Evaluation Number: S1-EV-00-0001

Revision No.: 0

Subject: Spent Fuel Pool Island and Control Room Transition Projects

### Description of the Activity

A brief description of the Millstone Unit 1 Spent Fuel Pool Island (SFPI) and Control Room Transition (CRT) Project is provided below.

1. Install a new spent fuel pool cooling secondary cooling system.
2. Install a new spent fuel pool makeup.
3. Install a new HVAC system for the SFPI envelope.
4. Install an in-pool cleanup demineralizer. The existing piping to and from the existing filter and demineralizer will be cut and capped.
5. Install a new SFPI electrical distribution system.
6. Install a new SFPI ventilation exhaust path with appropriate radiation monitoring and sampling capability.
7. Install new area radiation monitors on the 108' elevation of the reactor building to functionally replace the existing monitors.
8. Install new instrumentation in the new and modified systems.
9. Install a new Central Monitoring Station (CMS) in Building 103.
10. Install a new Programmable Logic Controller (PLC) based monitoring and control system for SFPI equipment and related auxiliaries.
11. Install CMS / Security area HVAC Unit / System.
12. Install telecommunications equipment in the CMS.

Numerous documents are being revised to reflect the above changes. This Safety Evaluation also addresses the implementation and testing phases.

### Reason for the Activity

The SFPI/CRT project will eliminate the fuel pool ties to the remainder of the Unit 1 facility by the creation of a stand alone 'Island' which will allow the remainder of the plant to be safely dismantled and decommissioned. This modification locates the new SFPI instrumentation and controls in the CMS and provides power to the CMS.

### Safety Evaluation Summary

The changes are safe and do not constitute an unreviewed safety question.

The systems modified by these design changes (spent fuel pool cooling, makeup and electrical power) are not safety related. They are not required to function to prevent or mitigate the consequences of the fuel handling accident, and are not included in assumptions inherent in the

analysis of that event. The modified systems will provide a level of reliability equivalent to the existing systems.

Active or passive pressure boundary failures in any of the modified systems will in no way affect the integrity of the spent fuel pool, or the stored fuel. Unacceptable structural interactions between SFPI equipment and the Seismic Category I reactor building structure are precluded by equipment anchorage design where required. Attachments made to the fuel pool liner to install the new pool level instrumentation will (1) ensure the integrity of the liner is maintained and (2) ensure that there will be no unacceptable interactions during a seismic event.

Fuel pool cooling capability will be maintained at all times during the modification activities except for final tie-in to the reactor building component cooling water (RBCCW) system and cutting and capping of unisolable fuel pool cooling piping sections to be abandoned. This outage time will be minimized and will be conducted in accordance with the existing system operating procedure. Spent Fuel Pool makeup capability will be maintained at all times during the implementation process.

The consequences of loss of spent fuel pool cooling following implementation of these design changes are the same as those described in DSAR Section 3.2.1.3.3. The spent fuel pool primary and secondary cooling systems will operate satisfactorily at temperatures up to 170°F. Adequate time is available to reestablish cooling. Additionally, the pool could operate indefinitely without active cooling at 163°F provided that the tornado dampers are opened within 5 days and that makeup at a rate of at least 3 gallons per minute (gpm) is established within approximately 30 days.

The new SFPI effluent radiation monitor and the new refueling floor area monitors are identical in function to the existing radiation monitors. The implementation process will maintain the existing area monitors in operation until the new monitors are fully operational. A sampling program will be implemented during initial calibration and startup testing of the new effluent monitor while the new SFPI HVAC discharge path is in operation.

Elevated resin temperatures in the new ion exchanger will have no deleterious impact on the spent fuel.

The only remaining Unit 1 accident is the fuel handling accident. This design change will install an in-pool ion exchanger to functionally replace the existing ion exchanger. The installation and support structure will be identical to that used to install and support the Tri-Nuc Filter Skid which has been previously evaluated in DSAR Section 5.2.1. The ion exchanger weight is 877 pounds as compared to 965 pounds for the filter skid. Since the same physical and administrative controls will be used to install the new ion exchanger, the probability of a fuel handling accident is not increased. The consequences of dropping the new ion-exchanger into the spent fuel pool are bounded by the consequences of the other drop scenarios described in DSAR Section 5.2.1, since the weight of the ion exchanger is less than that evaluated.



The radiological consequences of the fuel handling accident considering the new SFPI effluent release point and the new control room location were evaluated. The results of this analysis show the offsite and CMS dose values are lower than, and therefore bounded by the existing analysis results in DSAR Section 5.2.2.

The control room transition process will ensure command and control is maintained at all times from either the existing control room or the new CMS.

Safety Evaluation Number: S1-EV-00-0002

Revision No.: 0

Subject: Process Radiation Monitoring Package

### Description of the Activity

The proposed change to the Millstone Unit No. 1 (MP1) Defueled Safety Analysis Report (DSAR) is composed of the following changes:

- Remove Refuel Floor Area Monitors (Reactor Building Exhaust Ventilation to Plenum process radiation and Reactor Building Exhaust Ventilation Refuel Floor process radiation monitor) from DSAR Sections 4.6, 4.6.1.1, and 4.6.1.2.1, and Table 4.6-1. These radiation monitoring subsystems will also be abandoned.
- Remove Stack Gas Sample Room Area Radiation Monitor (ARM 36) from DSAR Table 4.6-2.
- Remove reference to Reg. Guide 1.97 in DSAR Section 4.6.1.1.
- Remove Stack Gas - High Range process radiation monitor from DSAR Table 4.6-1.

### Reason for the Activity

- The Refuel Floor Area Radiation Monitors monitor the room air at the refueling floor area to provide prompt indication of a gross release of radioactive material. This function is now redundant to the ARM 1, 2, and 3 in DSAR Table 4.6-2 which perform the same function. Thus, the Refuel Floor Area Radiation Monitors are no longer required to support plant, other unit or site activities and have been categorized as Abandoned.
- The Stack Gas Sample Room Area Radiation Monitor is not required by the Unit 1 Technical Requirements Manual, the Unit 1 Defueled Technical Specifications or Units 2 and 3 and has been categorized as abandoned. The Stack Gas Sample Room Area Monitor was originally installed to warn of high radiation levels coming from the Stack Gas Normal Range during an accident prior to the installation of the Stack Gas High Range (Kaman) monitor. The Kaman now isolates the Stack Gas Normal Range monitor on high activity. Abnormal radiation levels could still potentially occur in the Stack Gas Building during a Unit 2 or 3 accident. However, only qualified personnel under the direction of the Site Emergency Team might be required to enter the Stack Gas Buildings to obtain grab samples. As with any accident, appropriate radiological precautions will be taken prior to entering the Stack Gas Building. Therefore, ARM 36 can be deleted from the DSAR.
- Reg. Guide 1.97 includes requirements for structures, systems and components used to monitor conditions of the unit and off-site releases following a reactor accident. Since

reactor accidents are no longer possible in the Permanently Defueled Condition (PDC), these requirements are no longer applicable.

- In the PDC, the Stack Gas - High Range process radiation monitoring subsystem is no longer required to meet Reg. Guide 1.97 requirements for Unit 1. The Stack Gas - High Range process radiation monitoring subsystem is only required to meet Reg. Guide 1.97 requirements for Units 2 and Unit 2/3 E-Plan event Classification.

#### Safety Evaluation Summary

This change does not involve an unreviewed safety question.

Abandoning the radiation monitoring subsystems by installing boundary safety tags and performing final system alignments in accordance with approved procedures does not affect hazards, or accident initiators previously evaluated. In addition, these radiation monitoring subsystems are not safety-related.

There are no new equipment malfunctions associated with the removal of the radiation monitoring subsystems or their abandonment.

Abnormal radiation levels will occur in the Stack Gas Building only during a Unit 2 or 3 accident. As discussed in the E-Plan, only qualified personnel under the direction of the Site Emergency Team will be required to enter the Stack Gas Building. As with any accident, appropriate procedural radiological precautions are taken prior to entering the Stack Gas Building with or without ARM 36. Therefore, the strategy for entering the Stack Gas Building during an accident remains unaffected.

The capability to continuously measure the radioactivity in the Reactor Building and provide continuous indication in the Control Room will still be provided by ARMs 1, 2 and 3. The trip function (isolate the normal ventilation and initiate operation of the Standby Gas Treatment System (SGTS)) of the Refuel Floor Area Radiation Monitors (Reactor Building Exhaust Ventilation to Plenum and Reactor Building Exhaust Ventilation Refuel Floor) was previously evaluated as no longer required in the change from the Final Safety Analysis Report (FSAR) to the DSAR. These monitors are essentially redundant to ARMs 1, 2, and 3 in terms of measuring radioactivity in the Reactor Building and providing indication to the Control Room.

Safety Evaluation Number: S1-EV-00-0003

Revision No.: 0

Subject: Change to Defueled Safety Analysis Report to permanently close Spent Fuel Pool Gates

Description of the Activity

The following sentence was added to the end of the third paragraph of Defueled Safety Analysis Report (DSAR) Section 3.2.1.2.2:

“Both gates are permanently closed and form part of the pool boundary.”

Reason for the Activity

This change is necessary to clearly differentiate the spent fuel pool from the reactor cavity.

Safety Evaluation Summary

The gates are currently described in the closed position and "allowed" to be open or closed. Opening the gates was necessary to support plant operations, specifically movement of fuel or reactor components between the reactor vessel and the fuel pool during refueling outages. When the gates are closed, their function is to act as part of the boundary for the spent fuel pool. The change does not create any new passive (structural) or active (movement) failures or malfunctions. The closed position of the gates is described in the safety analysis report (SAR). This change prevents future removal of either gate without evaluating plant conditions at the time. The fuel handling analysis assumed that a gate was dropped while being moved. Revising the DSAR to require that the gates remain in place will decrease the probability of this accident.

The change does not involve an unreviewed safety question.

Safety Evaluation Number: S1-EV-00-0004

Revision No.: 0

Subject: Spent Fuel Pool Cleanup Activities

### Description of the Activity

This Safety Evaluation is written to evaluate the impact of the following Spent Fuel Pool Cleanup activities:

1. Movement of materials and equipment up to the Reactor Building loading well including drops.
2. Loading imposed on the spent fuel pool due to installation of equipment including drops.
3. Drops of items as they are moved from their current location to the processing equipment.
4. Foreign materials generated as part of the processing process.
5. Effect of placing equipment in and out of the pool on the fuel pool and skimmer surge tank level.
6. Removal of the HOLTEC control rod blade storage rack and the associated change to the Defueled Safety Analysis Report.
7. Effect of process fluids used in processing equipment.
8. The applicable procedures which govern these aspects.

The Spent Fuel Pool cleanup project has selected items which will be removed from the pool in five TN-RAM liners and one 8-120B liner. Described below is a conceptual work flow for the project. The order in which items are processed may vary depending on characterization and packaging space.

The start of the job includes personnel training, and equipment receipt and laydown on the refueling floor. Following this, the Velocity Limiter Shear (VLS) and Roller Bearing Punch (RBP) will be installed in the Spent Fuel Pool. The 38 Control Rod Blades (CRB's), 20 hanging along the East wall and 18 in the Control Rod Blade "gun barrel" racks, will have their velocity limiters and stellite bearings removed. The blades will then be replaced in similar positions. Next the VLS and RBP will be removed and the Underwater Shear/Compactor (USC) will be installed along with two TN-RAM liners and their support braces. Each control rod blade will be compacted and cut into four foot sections and placed in the liners. Enough control rod blades, approximately 21 blades for each liner, will be flattened and cut to fill the two liners. At this point, the TN-RAM cask arrives and one of the liners is loaded and the first shipment is made. The TN-RAM cask is loaded underwater. After this, the third liner is installed in the pool along with the LPRM cutter. Blades and LPRM's are processed until the TN-RAM cask returns. The second shipment is then made. By this time, the HOLTEC Control Rod Blade storage rack will be empty and will be removed from the pool. The removal of the HOLTEC blade rack requires a DSAR change. The Liner Tilt Stand (LTS) will then be installed along with a fourth liner. The LTS greatly improves the packaging efficiency of the liner. Processing continues until the TN-RAM cask returns and the third shipment is made. Again, processing will continue until the TN-RAM cask returns and the fourth shipment is made. After the fourth shipment, the 8-120 liner is

brought to the 108' elevation and the velocity limiters and Tri-Nuclear filters generated by this project are loaded by air picks. During an air pick, workers stand on the Reactor Building crane bridge, lift the items from the pool using hooks on ropes, and place them into the liner. The dose rate at the bridge will be low due to the distance from the pool and liner. When the 8-120 liner loading is complete, the cask is moved to the Waste Services department. When the TN-RAM arrives again, it will be loaded and the fifth shipment made. Once the last TN-RAM shipment is made, the remainder of miscellaneous boxes and LSA material is removed from the spent fuel pool, packaged, and the project is demobilized. Throughout the project, equipment may be moved into and out of the pool. This equipment may be placed in a tent with a HEPA unit to minimize contamination. The smaller irradiated items to be shipped, i.e., control rod blade handles, are loaded into the casks as room permits.

#### Reason for the Activity

The spent fuel pool cleanup project removes a majority of the highly radioactive material from the spent fuel pool to provide room for future activities of fuel inspection and fuel movement. This project is part of DSAR Section 7.1.1's decommissioning goal of preparing a plan for the spent fuel pool cleanup. In addition, DSAR section 7.1.1 includes removal of miscellaneous solid waste including control rod blades and local power range monitors.

#### Safety Evaluation Summary

The spent fuel pool cleanup project for Millstone Unit 1 is safe and does not constitute an unreviewed safety question. The TN-RAM cask is redundantly rigged and will not drop; drops or loading in the spent fuel pool will not change the fuel configuration; the fuel pool water will remain in place; drops in the loading well will not affect equipment important to safety; the process fluids, air and demineralized water, used in the processing equipment are compatible with the pool; Foreign Materials will be controlled and accounted for; fuel pool water level will not rise enough to flood the ventilation; and surge tank level will not fall enough to trip the spent fuel pool cooling pumps.

Safety Evaluation Number: S1-EV-00-0005

Revision No.: 0

Subject: Analysis for Spent Fuel Pool Cleanup

### Description of the Activity

This Safety Evaluation is written to evaluate the impact of the following activities in the spent fuel pool, Reactor Building 108' elevation and the Reactor Building 14'6" elevation:

1. Floor loading due to placement of the TN-RAM cask on the 108' elevation.
2. Movement or tip over of the TN-RAM cask due to a seismic event on the 108' elevation and on the cask pad.
3. Movement or tip over of the TN-RAM cask liner due to a seismic event in the pool while resting in the liner tilt stand or support brace.
4. Use of the Underwater Shear Compactor II (USC II) for the project.
5. Floor loading due to placement of the cask for the 8-120B liner on the 108' Elevation.
6. Storage of velocity limiters on empty fuel racks.

Additional activities have previously been evaluated in Technical Evaluation M1-EV-00-0001 and Safety Evaluation S1-EV-00-0004. The Spent Fuel Pool cleanup project has selected items which will be removed from the pool in five TN-RAM liners and one 8-120B liner. Described below is a conceptual work flow for the project. The order of the processing may vary depending on characterization and packaging space.

The start of the job includes personnel training, and equipment receipt and laydown on the refueling floor. Following this, the Velocity Limiter Shear (VLS) and Roller Bearing Punch (RBP) will be installed in the Spent Fuel Pool. The 38 Control Rod Blades (CRB's), 20 hanging along the East wall and 18 in the Control Rod Blade "gun barrel" racks will have their velocity limiters and stellite bearings removed. The blades will then be replaced in similar positions. Next the VLS and RBP will be removed and the Underwater Shear/Compactor (USC) will be installed along with two TN-RAM liners and their support braces. Each control rod blade will be compacted and cut into four foot sections and placed in the liners. Enough control rod blades, approximately 21 blades for each liner, will be flattened and cut to fill the two liners. At this point, the TN-RAM cask arrives and one of the liners is loaded and the first shipment is made. The TN-RAM cask is loaded underwater. After this, the third liner is installed in the pool along with the LPRM cutter. Blades and LPRM's are processed until the TN-RAM cask returns. The second shipment is then made. By this time, the HOLTEC Control Rod Blade storage rack will be empty and will be removed from the pool. The removal of the HOLTEC blade rack requires a DSAR change. The Liner Tilt Stand (LTS) will then be installed along with a fourth liner. The LTS greatly improves the packaging efficiency of the liner. Processing continues until the TN-RAM cask returns and the third shipment is made. Again, processing will continue until the TN-RAM cask returns and the fourth shipment is made. After the fourth shipment, the 8-120 liner is brought to the 108' elevation and the velocity limiters and Tri-Nuclear filters generated by this project are loaded by air picks. During an air pick, workers stand on the Reactor Building crane

bridge, lift the items from the pool using hooks on ropes, and place them into the liner. The dose rate at the bridge will be low due to the distance from the pool and liner. When the 8-120 liner loading is complete, the cask is moved to Waste Services department. When the TN-RAM arrives again, it will be loaded and the fifth shipment made. Once the last TN-RAM shipment is made, the remainder of miscellaneous boxes and LSA material is removed from the spent fuel pool, packaged, and the project is demobilized. Throughout the project, equipment may be moved into and out of the pool. This equipment may be placed in a tent with a HEPA unit to minimize contamination. The smaller irradiated items to be shipped, i.e., control rod blade handles, are loaded into the casks as room permits.

#### Reason for the Activity

The purpose of this spent fuel pool cleanup project is to remove a majority of the highly radioactive material from the spent fuel pool to provide room for future activities of fuel inspection and fuel movement. This project is part of DSAR Section 7.1.1, "Decommissioning Approach," which states a decommissioning goal of preparing a plan for the spent fuel pool cleanup. In addition, DSAR Section 7.1.1, "Other Decommissioning Activities," includes removal of miscellaneous solid waste including control rod blades and local power range monitors.

#### Safety Evaluation Summary

The activities associated with the spent fuel pool cleanup project for Millstone Unit 1 are safe and do not constitute an unreviewed safety question. The TN-RAM cask is redundantly rigged; drops or loading in the spent fuel pool will not change the fuel configuration and the fuel pool water will remain in place; drops in the loading well will not affect equipment important to safety; floor loading due to casks on the 108' elevation is acceptable; and a seismic event will not cause equipment to tip or to interact with fuel, fuel racks, or the spent fuel pool.



Safety Evaluation Number: SI-EV-00-0006

Revision No.: 0

Subject: Alternate Flow Path for Electric Fire Pump

### Description of the Activity

This temporary modification restores the operability of the electric fire pump while the normal discharge isolation valve for that pump (1-FIRE-5B) is shut to isolate a leak in the fire loop. The operability of the MP1 electric fire pump is restored by placing a jumper between the pressure switch sensing lines for the MP1 diesel and electric fire pumps and by establishing a flow path for the electric fire pump discharge through the full flow test line. The jumper between the pressure switch sensing lines is established with temporary tubing and by closing valve 1-FIRE-122. The flow path through the test line is established by opening and placing yellow tags on valves 1-FIRE-18A (Diesel Fire Pump to Test Stop) and 1-FIRE-18B (Electric Fire Pump to Test Stop) which are normally closed. These two actions ensure that the electric fire pump can receive a start signal from its dedicated pressure switch and that the discharge of the electric fire pump has a flow path to the underground loop. Opening these two valves gives the electric fire pump a discharge path to the unisolated section of the fire loop through the full flow test line and the discharge line for the diesel fire pump.

### Reason for the Activity

Establishing an operable flow path for the MP1 electric fire pump via the installed full flow test line is necessary in order to return the MP1 electric fire pump to operability while a portion of the fire loop (including the normal discharge line for the MP1 electric fire pump) is isolated for leak repair.

### Safety Evaluation Summary

This temporary modification restores the operability of the MP1 electric fire pump while its normal discharge path is isolated for leak repair by doing two things: 1) establishes a discharge flow path through the full flow test line and the MP1 diesel fire pump discharge line, and 2) places a jumper between the pressure switches for the MP1 diesel and MP1 electric fire pumps in order to restore the automatic start capability of the MP1 electric fire pump. Implementation of this temporary modification does not change the function of the electric fire pump or any other fire protection equipment. There is no increase in probability or consequences of a malfunction of any equipment important to safety and no new malfunctions are created. No accidents are affected by this temporary modification since the fire system function is not affected and the fire system is not credited with accident mitigation at any of the three Millstone units. Implementation of this temporary modification is safe and does not pose an unreviewed safety question.

Safety Evaluation Number: S1-EV-00-007

Revision No.: 0

Subject: Halon Fire Protection System Abandonment and Related Document Changes

Description of the Activity

The Halon Systems (mechanical portions only) protecting the Cable Vault and the Computer Room are to be abandoned. This Safety Evaluation evaluates this activity as well as changes to affected documents, such as the Defueled Safety Analysis Report (DSAR) and Technical Requirements Manual (TRM).

The U1-TRM-06 has requirements for the Cable Vault Halon system, but not the Computer Room Halon system.

The DSAR currently lists both Halon systems in section 3.2.9.2.2. It further lists "Local application Halon Systems" as having periodic surveillances, but there are no such systems at MP1.

Reason for the Activity

These systems protect equipment which no longer provides any safety function.

Safety Evaluation Summary

This activity does not involve an unreviewed safety question. The subject halon systems are physically remote from fuel handling operation, and do not protect structures, systems, or components which could represent a radiological hazard in a fire. Also, this activity cannot credibly influence any accidents or malfunctions.

Safety Evaluation Number: SI-EV-00-0008

Revision No.: 0

Subject: Unit 1 Bus 14H Modifications to Support the Unit 1 Spent Fuel Pool Island (SFPI)

#### Description of the Activity

The following modifications to MP1 4160V bus 14H will be implemented:

- Install a power monitor to allow bus parameters to be monitored via the new Programmable Logic Controller. This device is used for monitoring purposes only and has no adverse impact on the bus operation or reliability. The existing bus 14H under voltage relays will be replaced with new relays which provide the same level of protection, and will be compatible with the new power monitor.
- Install a new type of relay to provide over-current and ground current protection for the new Spent Fuel Pool Island (SFPI) 480V load center bus B1 to be installed under DCP-MI-99012. This change is necessary to provide an equivalent level of protection with the new SFPI load center connected to bus 14H.

#### Reason for the Activity

The above elements of the MP1 overall SFPI design modifications are being implemented in conjunction with the Unit 1 SFPI design change package. Portions of the modification were prepared in accordance with the site Design Change Manual since these changes are being made to a Unit 1 system (Bus 14H) which is shared with Unit 2. The SFPI design change was prepared in accordance with the Unit 1 Design Control Manual.

#### Safety Evaluation Summary

The functional and operational requirements for the Unit 1 electrical power and distribution system are unchanged by this activity. The consequences of a Bus 14H or associated malfunction are unchanged. There are no new failure modes or malfunctions associated with this change. The modifications made by this activity will not adversely impact the Unit 2 alternate power feed capability. An equivalent level of bus protection will be maintained following relay replacement, and the Unit 1 emergency diesel generator (EDG) load contribution from Design Change Package (DCP) MI-99012 (spent fuel pool cooling loads) is less than or equal to the existing load.

Consistent with previous Unit 1 EDG loading assumptions, the Unit 1 Spent Fuel Pool Cooling System loads are assumed to be connected to the EDG while supplying power to Unit 2. This is a conservative assumption, since as described in Section 3.2.7.4 of the Defueled Safety Analysis Report, Unit 1 does not require an emergency backup power source. Therefore, if necessary, the

SFPI supply breaker in Bus 14H can be opened for the entire duration of the Unit 2 event with no adverse safety implications for Unit 1. There are no changes required to the Unit 1 or Unit 2 Technical Specifications, Safety Analysis Report or Technical Requirements Manuals. These changes are safe, and do not constitute an unreviewed safety question.

Safety Evaluation Number: S1-EV-00-021

Revision No.: 0

Subject: Fire Detection Modifications for Spent Fuel Pool Island and Control Room Transition

#### Description of the Activity

The need to apply a graded quality program to Fire Protection systems (FPQA) is no longer applicable for Unit 1. Therefore, the requirement will be revised.

Installation of a new Master Fire Alarm panel and ancillary equipment to support the Spent Fuel Pool Island and the Control Room Transition Project. Re-direction of certain detection and notification circuits which are required to be maintained during the decommissioning phase.

#### Reason for the Activity

The existing control room contains the main fire control panel C960 and certain front panel annunciator displays. With the decision to decommission Unit 1, it was determined that the existing control room would be abandoned for a Central Monitoring Station (CMS). As subsequent system configuration changes are implemented, and more systems are decommissioned or abandoned, the current control room will be abandoned and the CMS will be manned. To support this transition and the subsequent need to monitor those fire alarms points necessary to support the defueled condition, new fire alarm equipment is required.

In conjunction with providing new equipment for the Fire Detection Modifications, the requirement to provide equipment within the frame work of a graded quality program is overly restrictive and not mandated by any regulatory requirements.

This Safety Evaluation is being written for those systems within the structural confines of Unit 1. This Safety Evaluations does not apply to shared systems required to support the other operating units, such as the exterior fire loop up to the first isolation valve, fire pumps, fire tanks, fire pump Halon system, and any common fire barriers. This Safety Evaluation makes no changes to any shared system or components thereof.

#### Safety Evaluation Summary

This Safety Evaluation concludes that the refining of the boundaries for the FPQA program, the relocation of fire detection signals to the CMS, is safe and does not constitute an unreviewed safety question. The Fire Detection System has no interaction either directly or indirectly to any equipment important to safety which has been credited in the accident analysis for mitigation of radiological release. The addition of a new Master Fire Alarm panel and a new reporting path for fire alarm signals, has no interaction with a fuel handling accident or any equipment which is credited in the mitigation of a fuel handling accident.

The new Master Fire Alarm Control panel interfaces with the Programmable Logic Controller (PLC) through contact closure. Failure of the interconnection loop would be annunciated on the PLC as a loss of a monitored point. The PLC and the New Master Fire Alarm panel are physically located in the same area and could be monitored with or without the PLC in service or a functional connection. Loss of fire detection annunciation via the PLC would not hinder the Master Fire Alarm panel to indicate an alarm condition. The Master Fire Alarm panel provides no initiating functions only annunciation. The operator response to either a PLC alarm or a Master Fire Alarm panel alarm would be the same.

The original basis for the graded quality program, FPQA, was Branch Technical Position (BTP) APCS 9.5-1, which was written to protect "safety-related" structures, systems, and components. None of the remaining safety-related structures, systems, and components described in the DSAR are credibly challenged by a fire.

Safety Evaluation Number: S1-EV-00-0022

Revision No.: 0 and 1

Subject: Fuel Pool Demineralizer Installation and Removal

#### Description of the Activity

This Safety Evaluation evaluates the installation, operation, maintenance, and removal of a demineralizer system which will be suspended from the Southwest Corner of the MP1 Spent Fuel Pool (SFP). This demineralizer system is manufactured by Tri-Nuclear Corporation, and will be redundantly rigged during installation and removal from the Spent Fuel Pool.

#### Reason for the Activity

The installation of the demineralizer system in the MP1 Spent Fuel Pool is necessary due to upcoming work in the SFP. The demineralizer system will maintain the general area dose rates low by removing ionic activity from the water within the SFP. The demineralizer system is being suspended in the spent fuel pool in order to allow for operation and maintenance of the demineralizers in a lower dose background area.

#### Safety Evaluation Summary

This Safety Evaluation assesses the installation operation, maintenance, and removal of a demineralizer system within the MP1 Spent Fuel Pool. This Safety Evaluation concludes that this activity does not constitute an unreviewed safety question and is safe. The demineralizer system will be located in the Southwest corner of the SFP suspended as a structure by slings from a support beam which bridges the corner of and rests on top of the SFP. This suspension method of installation is necessary in order to place the skid in a lower dose area to allow monitoring the demineralizer. The demineralizer is being considered a heavy load and, therefore, will be redundantly rigged during installation and removal. The Tri-Nuclear demineralizer assembly is bounded by the prior drop analysis, and is fully analyzed for seismic and other structural loads.

Safety Evaluation Number: S1-EV-00-0023

Revision No.: 0

Subject: Safety Evaluation for Partial Abandonment of the Reactor Water Cleanup (RWCU) System and Defueled Safety Analysis Report (DSAR) Modification

#### Description of the Activity

This Safety Evaluation will review the feasibility of abandoning a portion of the RWCU. The RWCU system is not required in the permanently defueled condition. A Safety Evaluation is required because the abandonment of the RWCU system will affect a function of a system described in the DSAR (fuel pool cooling), in particular the fuel pool filter. The fuel pool filter has backwash capability which is directed to the RWCU filter sludge receiver. This capability is not explicitly described in the DSAR. However, removing the backwash capability affects the filter functionality with respect to the fuel pool cooling system. The proposed change to the DSAR will add the following words to the fuel pool cooling system description:

The DSAR currently reads:

##### *1.2.3.1.2 Fuel Pool Cooling System*

The fuel pool cooling system provides cooling and clarifies the spent fuel pool water when required.

The fuel pool cooling system consists of a circulating pump, heat exchanger, skimmer surge tanks, a filter, a demineralizer, system piping, valves, and instrumentation and controls. For additional information, refer to Chapter 3.

The second paragraph is modified to read:

The fuel pool cooling system consists of a circulating pump, heat exchanger, skimmer surge tanks, a demineralizer, system piping, valves, and instrumentation and controls. There is an installed filter in the fuel pool cooling system, but it is not used since the demineralizer is operated on an as needed basis to clarify and purify the fuel pool. For additional information, refer to Chapter 3.

#### Reason for the Activity

In order to proceed with RWCU system abandonment, a Safety Evaluation must be performed to evaluate whether this proposed change is acceptable. This change will remove the backwash capability of the installed fuel pool filter. Removing the capability of filter backwash lines will affect the function of the installed fuel pool filter.



Safety Evaluation Summary

The RWCU system may be partially abandoned. Portions of the RWCU will remain unassessed until no longer needed. The RWCU system is no longer required in the permanently defueled condition. Additionally, the RWCU system is not required to support fuel pool operations in the permanently defueled condition.

This abandonment will also render the installed fuel pool filter non-functional by abandoning the fuel pool filter backwash lines. Although not specifically described in the DSAR, the filter has backwash capabilities. The backwash lines interface with the RWCU filter sludge receiver. The proposed method of operation of the fuel pool cooling system is not contrary to the description of the system in the DSAR. The current DSAR description of the fuel pool system states that pool clarity is a function of the demineralizer.

The proposed change does not involve an unreviewed safety question.

Safety Evaluation Number: S1-EV-00-0024

Revision No.: 0

Subject     Revise Defueled Safety Analysis Report Figure 2.1-3 to Remove Misleading Information

Description of the Activity

The proposed change removes information from Defueled Safety Analysis Report (DSAR) Figure 2.1-3 that is not specific to Unit 1, misleading, or out-of-date.

Reason for the Activity

During preparation of radiological calculations, DSAR Figure 2.1-3 has misled some people regarding the Unit 1 Exclusion Area Boundary (EAB). The textual description in Chapter 2 of the DSAR is correct, however the drawing provides an EAB that is apparently centered on the Unit 3 Reactor Building. Other changes were made to remove unneeded and out-of-date information to reduce the likelihood of any future changes being needed.

Safety Evaluation Summary

The proposed change does not effect the operation, configuration, design or description of Unit 1. The change merely reduces the amount of potentially misleading information and non-unit specific information that is provided on a site layout drawing in the DSAR. Because the proposed change is administrative in nature, it does not constitute an unreviewed safety question.

Safety Evaluation Number: S1-EV-00-0027

Revision No.: 1

Subject: Millstone Unit 1 Fire Hazards Analysis, Revision 5 and Associated Unit 1 Defueled Safety Analysis Report Change

#### Description of the Activity

This Safety Evaluation is for Revision 5 of the Millstone Unit 1 Fire Hazards Analysis (FHA). Also included in this Safety Evaluation is a revision to the MP1 Defueled Safety Analysis Report (DSAR) which removes information describing details of the FHA methodology. The DSAR is being revised to reference the FHA for the methodology information. This Safety Evaluation also addresses changes to DSAR Section 3.2.9.4, Inspection and Testing, to eliminate the emphasis of the Inspection and Test program on equipment that supports safe shutdown of the plant. DSAR Section 3.2.9.5.1, Fire Protection Organization, has been changed to reflect the new title for the former Chief Nuclear Officer. DSAR Section 3.2.9.5.2, Fire Brigade and Training, has been clarified to discuss MP1 specific involvement in the Fire Brigade activity. Several editorial changes are also included

Revision 1 added clarification to better describe the reason why this change does not increase the Consequences of a Malfunction of Equipment Important to Safety previously evaluated in the safety analysis report (SAR) and to properly identify the Accident evaluated as a fuel handling accident (specifically a postulated accident involving a gate dropped on fuel assemblies) versus a fuel drop accident as originally noted.

#### Reason for the Activity

The decommissioning of Millstone Unit 1 dictates that the FHA be revised to assess the current status of the facility from a fire protection standpoint. The physical plant changes documented in the revision are directly reflective of activities in the plant that have been reviewed in accordance with 10CFR50.59. Generally, the FHA document describes the construction, occupancy, and use features, fire protection features and combustible loading of each area of the plant. Reviewing this information, an assessment is then performed on the potential effects of a fire involving radiological material and the potential for radiological releases in each area or zone. No new changes to the plant are created by this document. To reflect the decommissioning project, Revision 5 incorporates the conceptual design of the Spent Fuel Pool Island Project, the general aspects of the Central Monitoring Station (CMS) and the future establishment of the unit as an Industrial Security Zone. These decommissioning projects have their own supporting Safety Evaluations. In addition, fire protection systems that are abandoned are also noted in the FHA. The abandonment packages had separate Safety Evaluations and are being added to the FHA for documentation purposes only. The FHA will be revised periodically as the decommissioning project continues and significant changes are accomplished.

The major DSAR change is for elimination of information which is a duplicate of information contained in Revision 5 of the FHA. The DSAR now references the FHA as the source of Fire Hazard Analysis information.

#### Safety Evaluation Summary

There are no unreviewed safety questions associated with the revision to the Fire Hazards Analysis or the DSAR. The FHA documents changes implemented in the Unit by other mechanisms in accordance with 10CFR50.59. The change to the DSAR was administrative. No accidents or malfunctions are influenced by this documentation change activity.

This revision updates the FHA to reflect the current decommissioning status and includes an emphasis on the radiological consequence of fires in plant areas. FHA, Revision 4 concentrated on the concern for safe shutdown of the facility following a fire and this is no longer an issue with the shutdown status of the plant. The analysis concludes that the fire protection program is adequate to mitigate any adverse radiological consequences from fires in the facility.

Safety Evaluation Number: S1-EV-00-0028

Revision No.: 0

Subject: Technical Requirements Manual; Fire Protection

#### Description of the Activity

This Safety Evaluation is to eliminate most of the requirements for fire barriers and fire doors in the Technical Requirements Manual (TRM). Only barriers surrounding the Unit 1 Control Room and Unit 1/Unit 2 common fire barriers are to remain in the TRM. Additionally, the action statements will be revised to require notification of the Unit 2 Shift Manager/Unit Supervisor if these fire barriers are non-functional. This Safety Evaluation is also intended to support future procedure and drawing changes necessitated by the removal of these TRM requirements.

#### Reason for the Activity

The existing applicability statements in the TRM, requiring fire barriers to be operable when the equipment in the area is operable, have become obsolete.

#### Safety Evaluation Summary

There are no unreviewed safety questions associated with this change.

The revision does not affect the ability to safely shutdown the plant, nor will it result in a reduction in the effectiveness of fire protection as required by 10CFR50.48(f), for facilities, systems, and equipment whose failure could result in a radiological hazard. Requirements for TRM fire barriers which could affect Unit 2 are unchanged.

The Fire Hazards Analysis (FHA) is incorporated by reference in the Defueled Safety Analysis Report (DSAR). This document does credit fire barriers, where appropriate. This TRM change does not abandon any fire barriers. The purpose of having TRM fire barrier requirements was to ensure separation of safety related and safe shutdown equipment, which is no longer an issue in the current plant mode. The radiological hazard associated with fires in Unit 1 is bounded by a calculation which evaluated resin fires with up to three fully loaded High Integrity Containers, and concluded that radiological consequences were well within regulatory limits.

Fire barriers themselves cannot credibly be considered to be accident initiators. The fire barrier system is not designed to protect or separate fuel handling equipment or operations.

Safety Evaluation Number: S1-EV-00-0029

Revision No.: 0

Subject: Issuance of Unit-Specific Unit 1 Fire Protection Program Manual  
and Incorporation into the Defueled Safety Analysis Report by  
Reference

#### Description of the Activity

This Safety Evaluation was prepared to review the issuance of a Unit 1 Fire Protection Program Manual (FPPM) and appropriate reference additions to the Defueled Safety Analysis Report (DSAR).

#### Reason for the Activity

The FPPM for the Millstone Station was a common site document. With the transition to a permanently shutdown and defueled condition at Unit 1, it has been determined that a Unit 1 specific program manual should be separated from the common site manual. Common site procedures identify the site FPPM as a license basis document, and therefore with the separation of the FPPM into a unit specific document, appropriate references need to be added to the DSAR.

#### Safety Evaluation Summary

This Safety Evaluation evaluates the acceptability of issuing a Unit 1 specific Fire Protection Program Manual to administratively control Fire Protection activities that occur on Unit 1. It also evaluates the acceptability of incorporating reference this manual into the DSAR. The evaluation concludes that the proposed activity is acceptable since it is an administrative change that establishes management preference for the way that the Unit 1 Fire Protection program is controlled. The proposed change does not involve an unreviewed safety question. This change does not reduce the effectiveness of fire protection for facilities, systems, or equipment whose failure or degradation could result in a radiological hazard.

Safety Evaluation Number: SI-EV-00-0034

Revision No.: 0

Subject: Unit 1 Portion of the Seismic Instrumentation

Reason for and Description of the Activity

The Unit 1 portion of the Seismic Instrumentation is no longer required to support plant, other unit or site activities and has been categorized as "Abandoned" to support MP1 decommissioning.

The proposed change deletes the wording, "the seismic warning light or," from Section 3.1.6.1, "Comparison of Measured and Predicted Responses" of the Defueled Safety Analysis Report (DSAR).

Safety Evaluation Summary

The purpose of the Unit 1 SITE SEISMIC EVENT alarm was to provide Control Room operator notification when seismic motions are detected at Unit 2. Unit 1 has no dedicated instrumentation to detect a seismic event. If the SITE SEISMIC EVENT alarm actuates, it was attributed to Unit 2 receipt of a SEISMIC INST TRIGGERED alarm. The Unit 1 alarm is no longer required, since appropriate plant procedures have been modified and will be promptly entered when either Unit 1 detects ground motion or Unit 2 notifies Unit 1 of a seismic event detected with their Seismic Instrumentation. This will still allow Unit 1 to evaluate the response of those features important to safety following a seismic event.

No plant instrumentation or electrical systems are required for mitigation of the design basis fuel handling accident. The removal of the Unit 1 portion of the Seismic Instrumentation from the DSAR and its abandonment does not affect any accident initiators for the fuel handling accident since this alarm only provides notification to the operators following an earthquake. There is no change to the seismic design of structures, systems, or components important to safety. There were no malfunctions of the Unit 1 portion of the Seismic Instrumentation previously evaluated in the safety analysis report. There are no new malfunctions associated with this change.

The abandonment of the Unit 1 portion of the Seismic Instrumentation and the associated changes to the DSAR do not represent an unreviewed safety question.

Safety Evaluation Number: S1-EV-00-0035

Revision No.: 0

Subject: Unit 1 Structures, Systems, and Components that Interface with Units 2 or 3

Description of the Activity

The Unit 1 Control Room Halon system is added to Table 1 of U1-TRM-07, because it has attributes which are shared with Unit 2. Relevant reference and basis changes are also made.

Reason for the Activity

This Halon System is credited for 10 CFR 50, Appendix R compliance by Unit 2.

Safety Evaluation Summary

The change does not involve an unreviewed safety question. It adds existing plant equipment to the list of Unit 1 equipment that provides a support function for Unit 2. The only additional requirement imposed by the addition of this equipment to the TRM is that Unit 2 Operations will be notified if the equipment cannot provide its support function. The change will not affect the way the plant equipment functions or the way it is operated.



Safety Evaluation Number: S1-EV-00-0036

Revision No.: 0

Subject: Editorial and Administrative Changes to the MP1 Defueled Safety Analysis Report

Description of the Activity

The proposed changes correct editorial or administrative errors in numerous Sections of the MP1 Defueled Safety Analysis Report (DSAR). The proposed changes: 1) correct misspelled words; 2) resolve grammatical and presentation errors; 3) eliminate duplicate information; and 4) correct reference errors.

Reason for the Activity

These changes improve the quality of the MP1 DSAR.

Safety Evaluation Summary

The proposed changes correct editorial or administrative errors in numerous Sections of the MP1 DSAR. The proposed changes: 1) correct misspelled words; 2) resolve grammatical and presentation errors; 3) eliminate duplicate information; and 4) correct reference errors. These proposed changes do not involve any physical modifications to the plant, any changes to the manner in which the unit is operated, or any changes to the methodologies utilized to analyze the unit's operation. These changes were determined not to involve an unreviewed safety question.

Safety Evaluation Number: S1-EV-00-0037

Revision No.: 0

Subject: Changes to U1-TRM-07 to Add Interface Systems

Description of the Activity

Add Unit 1 Main Exhaust Fans HVE-1A, 1B, & 1C to Table 1 and Table 3 of U1-TRM-07. These tables list the Systems, Structures, and Components (SSC's) that support Unit 2 and Unit 3, respectively.

Add quarry cut Water Quality Monitor (WQM) to Table 1 of the U1-TRM-07, which lists the SSC's that support Unit 2.

Reason for the Activity

The change adds equipment that provides a support function for Units 2 and 3 to the Technical Requirements Manual (TRM).

Safety Evaluation Summary

The change does not involve an unreviewed safety question. It adds existing plant equipment to the list of Unit 1 equipment that provides a support function for Units 2 and 3. The only additional requirement imposed by the addition of this equipment to the TRM is that Units 2 and 3 Operations, as applicable, will be notified if the equipment can not provide its support function. The change will not affect the way the plant equipment functions or the way it is operated.

Safety Evaluation Number: S1-EV-00-0038

Revision No.: 0

Subject: Revise Spent Fuel Pool Temperature Requirements

Reason for, and Description of, the Activity

OPS Form 273-3/4.10.G in the Unit 1 Technical Requirements Manual (TRM) requires the spent fuel pool (SFP) bulk water temperature to be maintained  $\leq 140^{\circ}\text{F}$ . This requirement is met by performing a surveillance every eight hours. This activity proposes to change the acceptance criterion regarding the SFP bulk water temperature to  $\leq 125^{\circ}\text{F}$ , and to change the surveillance frequency to once every twenty-four hours. In addition, Section 3.2.1.3.1 of the Defueled Safety Analysis Report (DSAR) must also be changed to reflect the revision to the acceptance criterion.

The limit is being changed to be consistent with the limit defined in the operator training lesson plan and operation procedures. In addition, we propose to extend the surveillance to once every 24 hours to support shift staffing. This reduced frequency is appropriate given the reduced decay heat load in the SFP.

Safety Evaluation Summary

The acceptance criterion for the SFP bulk water temperature is changed from  $140^{\circ}\text{F}$  to  $125^{\circ}\text{F}$  in DSAR Section 3.2.1.3.1.a and TRM OPS Form 273-3/4.10.G. This acceptance criterion is consistent with that established in plant procedures. In addition, the Frequency for verifying the SFP bulk water temperature is changed from 8 hours to 24 hours in TRM OPS Form 273-3/4.10.G. The revised acceptance criterion is more restrictive, and will continue to ensure the availability of the SFP demineralizer by ensuring that the SFP bulk water temperature is maintained  $\leq 125^{\circ}\text{F}$ . The proposed changes do not alter the intent or method by which the surveillance is conducted, does not involve any physical changes to the plant, and does not alter the way any structure, system or component functions. In addition, the proposed change does not modify the manner in which the plant is operated, because the operation procedures require the SFP bulk water temperature to be maintained less than or equal to  $125^{\circ}\text{F}$ . Given the above, the proposed change does not involve an unreviewed safety question.

Safety Evaluation Number: S1-EV-00-0039

Revision No.: 0

Subject: Resin Transfer from the Spent Fuel Pool Island Demin System to a Chem-Nuclear Liner at MP1  
Resin Transfer from the Spent Resin Tank to a Chem-Nuclear Liner at MP1  
Resin Transfer from the Condensate Demineralizers to a Chem-Nuclear Liner at MP1

#### Description of the Activity

Resins will be transferred from the condensate and spent fuel pool in-water demineralizers, and the spent resin tank via Chem-Nuclear (waste processing vendor) procedures to liners for disposal. Contaminated waste materials will be transferred from existing plant equipment (tanks and demineralizers) to high integrity containers and shipping vessels for disposal at a licensed offsite facility. Wastes will be evaluated against applicable packaging, shipping and disposal regulations, prior to transfer to waste/shipping containers. The vendor systems are equipped with a resin transfer pump, dewatering tank with liner, a dewatering pump and filter, associated valves, pipe and hoses and a control/monitoring panel. The system also provides pressure washing equipment used during final cleanup. The procedures provide the purpose and applicability, requirements such as prerequisites, precaution/limitations, and utility interfaces. The instructions also provide for equipment installation, resin transfer, liner dewatering and equipment breakdown and disassembly.

#### Reason for the Activity

One of the activities required prior to MP1 becoming Cold and Dark is to dispose of all MP1 legacy waste. The disposal of these wastes will significantly reduce dispersed plant curie inventory. The subject procedures provide the instructions necessary for the installation, operation and disassembly of a Chem-Nuclear system that will allow resin to be transferred from the site to the Chem-Nuclear system cask, dewatered for transport and shipped to the Chem-Nuclear facility for final dewatering.

#### Safety Evaluation Summary

Spent fuel pool siphoning and fuel damage as a result of equipment drops in the spent fuel pool have been analyzed. Due to the piping layout of the "Chem-Nuclear System," a siphon cannot be established. Also, no lifts will be performed above the spent fuel pool during the resin transfer equipment installation or disassembly. The potential for a resin fire was evaluated and determined not to be credible since the resins will not be fully dewatered and therefore will not support combustion. Additionally, no ignition source was identified since the activity does not involve "hot work."

The entire Chem-Nuclear system operation has been evaluated with reference to credible failures of all components and processes:

Civil - Static and dynamic loads of all equipment were reviewed, including lifted loads and loads during placement on non site transport equipment.

Offsite Dose - No new concentrations of radionuclides which affect 10 CFR 20 values are possible. All liquids are contained within seismic boundaries per Regulatory Guide 1.143. All resins to be processed are plant derived. As the radioactive resins are removed from the site, the risk of approaching Offsite Dose Calculation Manual (ODCM) values is reduced.

Electrical Loads - All loads are fed from non-Q supplies

Other System - Interfaces such as fire protection, drainage, instrument/service air and demineralized water have sufficient capacity so that plant operations are not affected. The connections to plant systems are provided with check valves to prevent cross contamination due to back-flow or siphoning.

Therefore, the use of the referenced procedures with the appropriate Chem-Nuclear system equipment is safe and will not involve an unreviewed safety question.

Safety Evaluation Number: S1-EV-00-0040

Revision No.: 0

Subject: Unit 1 Cold & Dark Heating & Ventilation Requirements

Reason for, and Description of the Activity

During the cold and dark phase of decommissioning, ventilation of plant spaces will continue to play an important role in assuring acceptable air quality, control of radiological particulates and providing freeze protection for wet systems.

The following is a summary of ventilation systems / equipment to be re-powered / re-configured:

- The Machine Shop / Maintenance Shop will be occupied during the cold and dark phase of decommissioning. Heating and ventilation will be provided.
- During the cold and dark condition, only the decon room in the turbine building will be occupied, HVAC will be provided to this room by DPR DM1-00-0130-00. All wet systems in the Turbine Building will have been drained, the switchgear de-energized, batteries removed and diesels abandoned, thus significantly reducing ventilation requirements and eliminating the need for freeze protection / heat. Approximately 50,000 cubic feet per minute (cfm) of turbine building air will be exhausted via one main exhaust fan, which will also serve the reactor building and liquid radwaste building. Supply air will enter the building through existing dampers, which will be blocked open, and two new wall penetrations.

To optimize air circulation, high energy line break (HELB) enclosures around stairwells will be removed, doors not required for fire boundaries will be removed and one transfer fan, HVT-1, will be repowered. There will be no air circulation in areas below elevation 14'- 6", thus requiring controls for personnel access to these areas.

- During the cold and dark condition, the Liquid Radwaste Building will not be occupied. Systems will have been drained/emptied and abandoned, thus eliminating the need for freeze protection/heat. Since the building is predominately underground, ventilation will be provided to maintain a habitable atmosphere. Its exhaust will be re-routed to the inlet of the main exhaust fan.
- During the cold and dark condition, the Reactor Building will be divided into two zones, the Spent Fuel Pool Island (SFPI) and Balance of Reactor Building. The SFPI will have its own new ventilation system, provided by the SFPI Project. This system will receive control logic modifications to prevent excessive differential pressure from occurring between the two zones. The balance of Reactor Building ventilation system will provide ventilation and heat for freeze protection to areas of the Reactor Building outside the SFPI.
- During the cold and dark condition, only Units 2 & 3 will remain connected to the 375 ft stack. The Unit 1 connection to the stack will be severed and capped at the point where the

concrete portion goes underground, just east of the Unit 1 reactor building. The point inside the stack where Unit 1 discharges will be capped by the Unit Cross Ties Project. Unit 1 will discharge from the existing exhaust duct which runs along the North exterior wall of the Reactor Building. This duct will be severed approximately 20 feet West of the North East corner.

- A new effluent radiation sampling skid will be installed, on the 65' elevation of the Reactor Building, next to the SFPI radiation monitoring skid. This new system will draw samples from the Unit 1 exhaust duct, which runs along the north exterior wall of the reactor building. Air samples will flow through a particulate filter, which will be periodically removed for detailed radiological quantitative analysis.

This Safety Evaluation provides the basis for revising:

- The Defueled Safety Analysis Report (DSAR) to reflect the modifications.
- The Millstone Radiological Effluent Monitoring Offsite Dose Calculation Manual (REMODOCM) to reflect the new Balance of Plant (BOP) ventilation exhaust path and associated particulate sampler.
- Various Operating Procedure Changes to reflect the modifications.
- The Millstone Station Emergency Plan and related procedures to reflect the new Balance of Plant (BOP) ventilation exhaust path and associated particulate sampler.

Additionally, this Safety Evaluation addresses the implementation and testing phases for these modifications.

#### Safety Evaluation Summary

None of the ventilation systems or equipment installed, modified or re-powered by this DPR are safety related. These systems and equipment are not required to support any remaining safety related systems, structures, or components nor are they required to function to prevent or mitigate the consequences of the only remaining accident or sample releases resulting from this accident. They are not included in assumptions inherent in the analysis.

These modifications are safe and do not constitute an unreviewed safety question.

Safety Evaluation Number: S1-EV-00-0041

Revision No.: 0

Subject: External Flood Protection Modifications to Support Decommissioning

### Description of the Activity

The design basis external flood for Millstone Unit 2 is 22'- 0" mean sea level (MSL) while the grade elevation is 14'- 6". Therefore, Millstone Unit 2 requires flood doors/gates/walls designed to be secured in the event of impending flood conditions postulated to occur during a hurricane. For the southern boundary of the Turbine and Auxiliary Buildings, Unit 2 credits the contiguous Unit 1 Turbine, Radwaste/Control, and Reactor Buildings to provide flood protection. Unit 1 is similarly flood protected by a series of flood doors/gates/walls but only to the 19'- 0" elevation. Wave run-up above the 19'- 0" elevation is postulated to overflow the Unit 1 flood gates and collect in the condenser bay thereby providing a surge volume of approximately 700,000 gallons effectively protecting safe shutdown equipment at Unit 2 until the flood level subsides prior to exceeding the capacity of the Unit 1 condenser bay.

This activity installs a new boundary to protect Millstone 2 from the adverse effects of the design basis external flood. The proposed activity revises the flood design features by reinforcing the existing Unit 1 walls in the common area between the Units 1 and 2 Turbine Buildings on elevation 14'- 6", extending the Unit 1 flood gate #1 to be consistent with the Unit 2 design basis external flood level, and blocking up the stairwell in the 14'- 6" elevation of the Radwaste/Control Building leading to the lower levels of the Radwaste Building. Other existing floors and walls are sealed to accommodate the resulting hydrostatic pressure.

The balance of flood protection features previously credited to support safe shutdown of Unit 1 are no longer required based on the defueled condition of the plant and therefore are abandoned or turned over to the operating units. The abandonment of the flood gates protecting the 14H switchgear is delayed until the completion of the 4160V cross tie project such that severe weather protection is maintained for the shared system function of Station Blackout (SBO).

The flood protection afforded the Unit 1 Fire Pump House is still required since the fire water system is credited to supply cooling to Unit 2's Emergency Diesel Generator in the event of the design basis flood. During this scenario, the Unit 2 Service Water Pumps are secured and protected during peak flooding, and cooling water for one emergency diesel is supplied by the fire water system. The flood protection features installed on the Unit 1 Fire Pump House are designed for the Unit 2 design basis flood of 22'- 0" and therefore are acceptable as currently designed.

### Reason for the Activity

Based on the defueled condition of Unit 1, flood protection for safety related structures, systems, and components supporting Unit 1 operation is no longer required. The spent fuel pool is located within the upper elevations of the Reactor Building and well above the postulated flood height.



The design of the fuel pool cooling system is such that flood protection is not a required design feature (i.e., system is not safety related). In the event that fuel pool cooling is lost as a result of the design basis flood, adequate time is available to restore fuel pool cooling.

The decommissioning effort involves the installation of a proposed security boundary revision which will redefine the protected area near the interface between the south end of the Unit 2 Turbine Building and the north end of the Unit 1 Turbine and Control/Radwaste Buildings. This proposed redefinition of the security boundary results in most Unit 1 flood protection devices being located outside the protected area. Since the flood barriers are safety related, the control of the barriers outside of the revised protected area boundary would be lacking. It is also anticipated that decommissioning activities will involve the removal of equipment from the Unit 1 Turbine, Radwaste/Control, and Reactor Buildings requiring that the current flood boundaries be breached. Therefore, the flood protection strategy and design afforded Millstone Unit 2 has been reevaluated and revised accordingly. The proposed changes are consistent with other cross tie projects which functionally de-couple Unit 1 from Unit 2.

#### Safety Evaluation Summary

The revised flood boundary is comprised of passive devices which have no active failure modes and has no credited function to protect Unit 1. Unit 1 does not require external flood protection, because the plant is permanently defueled. The current configuration and storage of the spent fuel is adequately protected from the external flood without the need for flood protection devices. Thus, the change does not involve an unreviewed safety question.

Safety Evaluation Number: S1-EV-00-043

Revision No.: 0

Subject: MP2/MP3 Station/Service Air Cross-tie

Description of the Activity

The proposed activity separates the MP1 and MP2 Station Air (SA) systems.

Reason for the Activity

With the decommissioning of MP1, MP2 will lose the capability to have backup SA supplied from the MP1 SA system via an existing MP1/MP2 cross-tie. In addition, the buildings which are supplied by the MP2 SA and are part of the MP1 decommissioning will be "cold and dark" which may cause active system piping/components to fail. The lines connecting the MP1 and MP2 SA systems and the MP2 line to the Solidification Building will be cut and capped to separate from MP1.

Safety Evaluation Summary

The modification will not impact the functions of the SA system, including providing a supply of compressed air for normal maintenance activities and for backup to the Instrument Air System. A malfunction of the SA System will not impact any safety related system or component. The SA System is not an accident initiator, and is not credited in the mitigation of any events. The proposed changes to the SA System do not involve an unreviewed safety question.

Safety Evaluation Number: S1-EV-00-0044

Revision No.: 0

Subject: MPI Spent Fuel Pool Demineralizer Spent Resin Transfer

### Description of the Activity

This Safety Evaluation addresses new Procedures OP-310A, "SFPI Demineralizer Resin Replacement," and RW-46054A, "Gross Dewatering SFPI Demineralizer Resin Using VECTRA Resin Drying System." These procedures describe the process for: (1) sluicing spent resin from the in-pool demineralizer tank into a shielded container located on the Reactor Building (RB) 108' floor elevation, (2) installation of fresh resin, and (3) gross dewatering of the shielded container. The Spent Fuel Pool Island (SFPI) demineralizer is designed and installed with suitable connections, equipment and hoses to facilitate resin removal while the vessel is located in the spent fuel pool.

Procedure RW-46054A has been adapted from an existing approved procedure RW-46054, "VECTRA Resin Drying System," to:

- (1) Delete reference to the resin drying capability of the Vectra Resin Drying System since this capability will not be used on the SFPI resin. Instead, the system will only be utilized to perform gross dewatering of the high integrity container (HIC) following SFPI resin transfer. Waste Services Department will make provisions for final resin drying/disposal, and these drying activities are outside the scope of these procedures and this safety evaluation.
- (2) Delete reference to sludge and powdered resin processing since it is not applicable to MPI SFPI demineralizer resin processing.

In addition to the procedures addressed above, this Safety Evaluation also addresses movement of the shielded resin container inside the MPI Reactor Building.

### Reason for the Activity

These procedures are necessary to remove spent resin from the spent fuel pool demineralizer, collect and process the spent resin and install fresh resin in the demineralizer vessel.

### Safety Evaluation Summary

The changes described in this Safety Evaluation are safe, and do not constitute an unreviewed safety question.

The design and operational controls described in the resin transfer and processing procedures meet appropriate controls and requirements described in Defueled Safety Analysis Report (DSAR) Section 7.3.1. The sluicing and processing of Spent Fuel Pool (SFP) demineralizer resin

will not affect any equipment important to safety. The resin transfer and processing equipment addressed in the above referenced procedures is temporary and does not rely on, use or interface with any equipment important to safety. Cask movement over the spent fuel pool will be prohibited by procedure, thus precluding accidental load drop onto the spent fuel.

The radiological consequences of a spent resin transfer pressure boundary failure or cask drop resulting in wet spent resin spillage are bounded by the resin fire analysis due to the fire induced atmospheric dispersion of radioactivity. The resin fire radiological consequences are within the acceptance criteria of DSAR Section 7.3.1. There are no radiological consequences associated with inadvertent draining of a limited amount of spent fuel pool inventory during resin transfer since the level will remain well above the minimum Technical Specification level of 33 ft.

All piping connected to the spent fuel pool, including the spent fuel pool cooling system, is classified as non-nuclear safety (NNS) related since its failure will not reduce fuel pool inventory to unacceptable levels. The HIC will be dewatered during the resin transfer process thus minimizing the reduction in skimmer surge tank level. However, assuming the HIC is filled to capacity of while dewatering, the net reduction in surge tank level would be approximately 20". This will have no impact on SFP cooling or spent fuel pool level. Since the resin transfer pump discharge is above the pool surface, there is no concern for uncontrolled siphoning.

Safety Evaluation Number: S1-EV-00-0045

Revision No.: 0

Subject: Chem-Nuclear Systems Procedure - U1 Cleanup Filter Sludge Receiver Transfer

### Description of the Activity

As part of the MP1 decommissioning process, wastes with high specific activity, especially those which require special attention to maintain containment (such as liquids or slurry), have been targeted for early disposal. Expended ion exchange resin and filter sludges generated by operation of the reactor water cleanup filters fall into this category. The Chem Nuclear Systems (CNSI) procedure WI-CNS-108 which transfers wastes from plant equipment to a disposal liner will be used to complete the transfer from plant equipment to the transportation/disposal container.

Millstone 1 Operations is transferring expended powdered ion exchange resin and sludge from the Cleanup Filter Sludge Receiver Tank (CUFSR) to a CNSI 8-120 disposal liner contained in a shielded secondary containment shield cask (owned by Millstone), using the subject CNSI procedure. The entire waste disposal evolution includes radiological assessment of the waste, ALARA evaluation, review and specification of shipping and disposal options, transfer to the disposal liner, and removal from site. This safety evaluation is limited to the Chem Nuclear (CSI) activities setting up, testing and operating the equipment as described in the subject procedure. All supporting activities including structure, system, or component modifications, handling and closure of liner and cask, operations and chemistry plant configuration control and transport of waste offsite are evaluated elsewhere. The subject procedure describes tasks performed by the vendor including the installation and pressure testing of the vendor equipment and stepwise transfer of expended product using vendor supplied hoses, pumps, instrumentation and containers. Operation of installed plant equipment is the responsibility of Millstone employees and contractors and is outside the scope of this safety review.

### Reason for the Activity

The waste is scheduled for transfer and disposal offsite as part of the decommissioning of Unit 1. The disposal of resins and sludge reduces the inventory of potentially mobile or spillable licensed material which contributes to plant integrated dose and a possible loss of containment of radioactive material. Although the curie content of this material is only a small fraction of plant licensed material inventory, it is in a liquid, dispersible form and presents a greater safety threat than solid materials of equal curie content. Since most of the curie content in the Cleanup Sludge Receiver Tank consists of long-lived radioisotopes, a reduction in risk from storage to affect decay would be ineffective. Transferring the wastes to a licensed long-term disposal facility places the waste in a more stable environment and provides a large reduction of risk to plant personnel and a reduced risk to the public.

### Safety Evaluation Summary

The proposed evolutions do not interface with systems which provide fuel pool cooling , control of dose to the public or essential control room functions. The transfer of waste sludges and resins is a controlled evolution which uses few in-plant systems, none of these systems affect safety. The transfer is completed using trained personnel who are aware of possible impacts to safety equipment, using approved procedures. These transfers have been completed at MP1 in the past. The activity of the sludges being transferred is not unusual given the source system and hazards are well understood by all personnel. No high energy sources, chemical reagents, or heavy equipment which may fail and affect remote systems are used as part of this activity

The potential for a resin fire was evaluated and determined not to be credible since the resins will not be fully dewatered and therefore will not support combustion. Additionally, no hot work will be permitted in the area and no ignition sources have been identified.

Some loss of shielding afforded by engineered structures has occurred by use of the reactor equipment hatch area. The double doors and above grade location do not provide the same shielding geometry as normally utilized in-plant locations. The movement of wastes will be performed by a contractor under indirect control of MP1 personnel using a contractor procedure. The transfers will take place completely within the reactor building and the liner will remain within the shield/transport cask. Direct shine through the railroad bay door is the primary path to offsite gamma exposure, which will not exceed a small fraction of annualized 10CFR20 doses.

The proposed activity does not involve an unreviewed safety question.

Safety Evaluation Number: S1-EV-00-046

Revision No.: 0

Subject: Cold and Dark Modifications for Fire Protection / Underground Fire Main Cut and Cap and Interior Piping Modifications

Reason for, and Description of the Activity

Cold and Dark conditions will require that certain fire protection systems be drained to prevent freezing. Modifications will involve: (1) the excavation of existing underground fire mains, (2) the cutting and capping of these mains and interior feed piping to provide physical isolation of the Unit 1 fire protection systems from the Millstone Site fire main system, (3) resupply of the Maintenance Shop sprinklers and hose stations, and (4) the conversion of select interior sprinkler and fire hose systems to "dry manual" operation. This will prevent the accidental discharge or leakage of water from the active/pressurized portion of the site fire water supply into the unheated portions of the Unit 1 facilities while still providing a manual fire suppression capability and will maintain necessary fire suppression systems to heated areas of the facility. Only one supply feed in a permanently heated area of Unit 1 (Maintenance Shop area) will remain following this work. Sprinkler systems and hose stations in the Turbine Building, Reactor Building and Radwaste Building will be converted to "dry manual" systems and will serve as backup suppression systems to hose streams fed from outside fire hydrants.

This safety evaluation addresses changes to the Unit 1 Defueled Safety Analysis Report (DSAR) and the Unit 1 Technical Requirements Manual (TRM).

Safety Evaluation Summary

The remaining fire water suppression systems and interior hose stations in Unit 1 are not credited for the protection of any remaining structures, systems, or components. Fire water suppression systems and interior hose stations are not credited for fire protection of the spent fuel pool storage system. The hose station that is credited for providing make up water to the fuel pool will still be available in a manual operation mode. The modifications to the fire water supply to Unit 1 will not adversely affect the operation of the remaining sprinkler systems or interior hose stations. Supply to these systems will be adequate. The conversion from wet to dry sprinkler/hose station systems will not adversely affect any systems important to safety and is an acceptable change in fire suppression capability based on the reduced hazards in the decommissioned facility. The sprinkler systems and hose stations will still serve as effective backup systems to manual hoses from yard hydrants that provide primary fire suppression capability. The proposed changes do not involve an unreviewed safety question.

Safety Evaluation Number: SI-EV-00-0047

Revision No.: 0 and 1

Subject: Loss of Normal Power (LNP)/ Manual Start Diesel Generator

Description of the Activity

Abandonment of the Unit 1 LNP control system including de-energizing the LNP logic circuits and undervoltage sensing circuits on 4160V and 480V buses. The abandonment will require Operations to perform manual load shedding, manual Emergency Diesel Generator start-up, manual re-energizing the 4160VAC buses along with the associated 480VAC buses and Service Water valve alignment in the event of an LNP. This is already performed in the event of a Unit 2 Station Blackout (SBO).

Reason for the Activity

This arrangement will help maintain the Unit 1 "unavailable" time within the Millstone site's goal of < 500 hours.

Revision 1 is prepared to address additional postulated malfunctions required to fully bound related procedure changes.

Safety Evaluation Summary

Emergency power is not credited by Unit 1 in the defueled condition to mitigate any Unit 1 events. Thus, the emergency diesel generator is no longer needed. Disabling the LNP logic results in no impact on Unit 1.

The proposed changes to LNP circuits have no impact on the availability and reliability of the emergency diesel generator (EDG) to supply Unit 2 with electrical power. The potential safety impact for modification of the LNP circuit is the difference in the amount of time it takes for automatic operation of the LNP circuits versus manual actuation of the same circuits. The manual actions can be taken within one hour, the time frame allowed to complete manual actions in the event of a SBO. The change does not involve an unreviewed safety question.



Safety Evaluation Number: S1-EV-00-0052

Revision No.: 0

Subject: Wrong Procedure Step Referenced in Defueled Safety Analysis Report Corrected

Reason for, and Description of the Activity

Section 2.3.14, "Technical Specification and Emergency Operation Requirements," of the Defueled Safety Analysis Report (DSAR) includes an incorrect reference to section 2.3.2.2 of Station Procedure ONP 514A. The DSAR indicates that this procedure step addresses necessary precautions and actions to take in the event of anticipated hurricanes, tornado or flood conditions. There is no step 2.3.2.2 in ONP 514A. The proposed change is to revise this paragraph to indicate that procedures address the necessary precautions and actions to take in the event of anticipated hurricanes, tornado or flood conditions, without specific reference to which procedure or step fulfills this function. No change to ONP 514A is proposed.

Safety Evaluation Summary

The proposed revision to the DSAR is purely administrative reflecting an editorial preference to include a non-specific reference to plant procedures in lieu of the existing reference to a specific procedure step. Since the change is not a substantive one and does not effect the way the plant is constructed, operated, or maintained, the change does not involve an unreviewed safety question.

Safety Evaluation Number: S1-EV-00-0053

Revision No.: 0

Subject: Abandonment of Main and Normal Station Service Transformers

Reason for, and Description of the Activity

The Unit 1 Main Transformer and the Unit 1 Normal Station Service Transformer (NSST) are to be permanently isolated and removed from service. To support this activity, Figure 3.2-11 of the Defueled Safety Analysis Report (DSAR) and Section U1-TRM-07 of the Millstone Unit No. 1 Technical Requirements Manual (TRM) need to be revised. DSAR Figure 3.2-11 provides a sketch of the site 345 kV switchyard, including a reference to the Main Transformer; this drawing will be updated to reflect the abandonment of the Unit 1 Main Transformer. Section U1-TRM-07 of the Millstone Unit No. 1 TRM contains requirements regarding the Unit 1 NSST to support Unit 2's compliance with Limiting Condition for Operation (LCO) 3.8.1.1.a.; these requirements will be eliminated.

Safety Evaluation Summary

No electrical systems perform a safety related function at MP1. The requirements regarding the MP1 NSST in the MP1 TRM are not required to support MP1. The requirements support a MP2 licensing basis. The proposed changes to the MP2 licensing basis are addressed in Safety Evaluation S2-EV-00-0038.

The proposed changes do not involve an unreviewed safety question.

Safety Evaluation Number: S1-EV-00-0054

Revision No.: 0

Subject: Revise Section 1.4 of the Defueled Safety Analysis Report

Reason for, and Description of the Activity

Section 1.4 of the Defueled Safety Analysis Report (DSAR) states: "In addition, the Millstone Unit No. 3 FSAR is incorporated into the MP1 DSAR by reference." This statement is misleading, it implies that the entire MP3 Final Safety Analysis Report (FSAR) is incorporated into the MP1 DSAR. Discussions with the individual who wrote Chapter 1 of the MP1 DSAR have established that the intent was not to incorporate the entire MP3 FSAR, only those sections that are specifically referenced in the text of other MP1 DSAR sections. Therefore, DSAR Section 1.4 will be revised to state: "Specific sections of the Millstone Unit No. 3 FSAR are incorporated into the MP1 DSAR by reference. These sections are identified within the text of the DSAR."

Safety Evaluation Summary

The proposed change modifies an administrative reference in the MP1 DSAR, it does not change the intent of the statement as identified by a discussion with the author of the section. Therefore, the proposed change does not involve an unreviewed safety question.

Safety Evaluation Number: S1-EV-00-0055

Revision No.: 0

Subject: Revise Action 1 of Section G of U1-TRM-06

Reason for, and Description of the Activity

This proposed change modifies the actions to take in the event a Unit 1 fire door or barrier required by Sections E and G of U1-TRM-06 is determined to be non-functional. The actions are being modified to be consistent with those required by Unit 2.

Sections E and G of U1-TRM-06 requires the fire barriers and fire doors surrounding the Unit 1 Control Room and the fire barriers that are shared between Units 1 and 2 to be functional. In the defueled state, the Unit 1 Control Room no longer serves a purpose in the resolution of malfunctions or accidents at Unit 1. Thus, the required fire barriers and doors only function is to confine or adequately retard the fire from spreading to Unit 2.

In the event a required Unit 1 fire barrier or door shared with Unit 2 is non-functional, the actions will require the Unit 2 Shift Manager (SM)/Unit Supervisor (US) to be notified. Unit 2 will be responsible for establishing the appropriate compensatory measures in accordance with the Unit 2 Technical Requirements Manual (TRM).

In the event a required Unit 1 fire door or barrier is non-functional and is not shared with Unit 2, Sections E and G of U1-TRM-06 will contain requirements that are consistent with those required by the Unit 2 Technical Requirements Manual.

Safety Evaluation Summary

The proposed changes do not reduce the scope of the TRM requirements (i.e., no fire doors or barriers are removed). They have no impact on the analysis of the fuel handling accident. The modified requirements do not protect a function required to conduct activities at Unit 1 safely. In the defueled state, the Unit 1 Control Room no longer serves a purpose in the resolution of malfunctions or accidents at Unit 1. Thus, the required fire barriers and doors only function is to confine or adequately retard the fire from spreading to Unit 2. These requirements ensure that adequate compensatory actions are taken to confine and adequately retard a fire from spreading to Unit 2. The actions are consistent with those imposed by Unit 2 for similar conditions.

The proposed changes do not involve an unreviewed safety question.

Safety Evaluation Number: S1-EV-00-0057

Revision No.: 0

Subject: Correct Reference to Unit 2 TS in Unit 1 Technical Requirements Manual

Reason for, and Description of the Activity

U1-TRM-07, Table 1, Items 11 and 12 refer to Unit 2 Technical Specification 3/4.3.10. These references are incorrect. They should refer to Unit 2 Technical Specification 3/4.3.3.10. These references refer to the source for a requirement, they do not direct a user to a particular specification. Therefore, these errors regarding the references are administrative.

Safety Evaluation Summary

The proposed changes to U1-TRM-07, Table 1, Items 11 and 12 correct a reference to a specific Unit 2 Technical Specification. These changes correct an administrative/editorial error. They do not affect any systems, structures, or components, nor do they involve any change to the manner in which the plant is operated. The proposed changes do not involve an unreviewed safety question.

Safety Evaluation Number: S1-EV-00-0058

Revision No.: 0

Subject: Technical Requirements - Fire Protection

Reason for, and Description of the Activity

The fire hose stations contained in Table 1 of U1-TRM-06 are being removed from the Table, with the exception of the Control Room fire hose 1-HS-119 (to be renumbered as 2-HS-261) and Solid Radwaste fire hose stations 1-HS-150 and 1-HS-152. Fire hose station 2-HS-261 is maintained in the Unit 1 Control Room, because it protects fire exposure to the Unit 2 Control Room where there is not a fire rated boundary between the two Control Rooms. Fire hose stations 1-HS-150 and 1-HS-152 are retained to assure that fires in Solid Radwaste can be controlled to prevent offsite releases exceeding exposure guidelines.

The deletion of these fire hose stations from Table 1 of U1-TRM-06 is being done because the affected fire hose stations no longer protect safety related structures, systems, or components (SSCs) where fire could create a radiological hazard. The basis for the hose stations in the Technical Requirements Manual (TRM) states that the operability of the hose stations ensures that adequate fire suppression capability is available to confine and extinguish fires occurring in any portion of the facility where there are SSCs which could result in a radiological hazard. The Defueled Safety Analysis Report (DSAR) for Unit 1 states that makeup water for the fuel pool is available from the demineralized water system and the fire water system.

The fire hose stations will continue to be maintained in accordance with the guidance of Nuclear Electric Insurers Limited (NEIL) for personnel and property protection until the fire suppression water header is drained for cold and dark. After cold and dark, the fire system can be flooded in order to supply makeup water to the fuel pool.

The ACTION statement for Section D has been revised to allow using an "available" hose station as compensatory measure for an inoperable hose station, rather than an "OPERABLE" hose station, since the nearest equivalent capacity hose station might not be a TRM hose station.

Safety Evaluation Summary

The proposed changes do not involve an unreviewed safety question. The eliminated fire hose stations no longer protect safety related areas. The hose stations will continue to be maintained in accordance with the guidance of Nuclear Electric Insurers Limited (NEIL) for personnel and property protection until the fire suppression water header is drained for cold and dark. After cold and dark, the fire system may be reflooded by opening a single valve in order to fight any fires, or to allow for fuel pool makeup if the normal source of demineralized water from the condensate transfer system is unavailable.

Safety Evaluation Number: SI-EV-00-0059

Revision No.: 0

Subject: Cold and Dark Modifications for Fire Protection / Underground Fire Main Line 6"-FP-16 Cut and Plug Piping Modifications

#### Description of the Activity

This modification will involve the cutting and plugging of fire line 6"-FP-16 upstream of valve 1-Fire-38.

#### Reason for the Activity

Cold and Dark conditions will require that certain fire protection systems be drained to prevent freezing. To support this approach, redundant fire water feed lines into MP1 will be cut and abandoned. This modification will involve the cutting and plugging of fire line 6"-FP-16 upstream of valve 1-Fire-38. This will prevent the accidental discharge or leakage of water from the active/pressurized portion of the site fire water supply into the unheated portions of the Unit 1 facilities. Only one supply feed leading into a permanently heated area of Unit 1 (Maintenance Shop area) will remain following this work.

This modification will require changes to the Unit 1 Defueled Safety Analysis Report (DSAR) drawing to show the new fire water feed line arrangement. The DSAR will be provided with a description of the new fire water distribution supply that is to be provided by the single feed into the Maintenance Shop. This safety evaluation addresses those document revisions as well.

#### Safety Evaluation Summary

The modification to the fire water supply system is safe, and does not constitute an unreviewed safety question. The remaining fire water suppression systems and interior hose stations in Unit 1 are not credited for the protection of any remaining structures, systems, or components. The modifications to the fire water supply to Unit 1 will not adversely affect the operation of the remaining sprinkler systems or interior hose stations as there is adequate flow from the remaining feed line. Based on the use of National Fire Protection Association (NFPA) approved materials and installation methods, the pressure integrity of the yard fire water piping system will be maintained.

Safety Evaluation Number: S2-EV-00-0054

Revision No.: 0

Subject : Wide Range Gas Monitor (WRGM)

### Description of the Activity

The purpose of this change is to eliminate Unit 2 and Unit 3 dependence on the Unit 1 Main Stack gas high range radiation monitor by providing separate dedicated monitors for both Unit 2 and Unit 3. This proposed change removes the Unit 1 Main Stack gas normal and high range radiation monitor from the stack gas sample room (Building 126) in order to install a new Unit 2 Wide Range Gas Monitor (WRGM)(RM-8169), which will be dedicated to support Unit 2. The existing Unit 3 Supplementary Leak Collection and Release System (SLCRS) radiation monitors (HVR\*RE19A and HVR\*RE19B) have been installed previously to meet the requirements of Regulatory Guide 1.97, Revision 2, and will be used to monitor effluents from Unit 3. The WRGM will be credited as the Unit 2 Regulatory Guide 1.97 monitor. In accordance with DCR M3-00012, which transfers control of the Unit 1 Main Stack to Unit 3, the Unit 1 Main Stack will be referred to as the Millstone Stack.

Systems, Structures, and Components (SSCs) associated with the Unit 1 Radiation Monitoring System (RMS) include those SSCs which comprise the Stack Process Radiation Monitoring System.

This Safety Evaluation also addresses the installation of stainless steel instrumentation tubing, heat tracing, conduit and signal and control cables located in the Stack and stack gas sample room, as well as the installation of cable to the Unit 2 Control Room and the installation of Remote Indicating Controls (RIC) alarms and computer points in the Unit 2 Control Room.

Implementation of this design change request (DCR) will cause entry into the Radiological Effluent Monitoring and Offsite Dose Calculation Manual (REM/ODCM) for Unit 1 and Technical Specification Limiting Conditions for Operation (LCO) for Units 2 and 3. The DCR includes specific details for pre-planned compensatory actions required during installation and testing phases of the project. This Safety Evaluation addresses the specific pre-planned compensatory actions required for successful completion of this DCR.

### Reason for the Activity

The decommissioning of Millstone Unit 1 requires the separation of SSCs associated with Unit 1 which support Millstone Unit 2 or Unit 3 operation. This allows Unit 1 to abandon or demolish Unit 1 SSCs without affecting the safe operation of either Unit 2 or Unit 3.

Millstone Stack gas effluent normal and high range monitoring currently is performed by Unit 1 components. This DCR removes these components and replaces them with a Wide Range Gas Monitor (WRGM). The existing Unit 3 SLCRS radiation monitors, HVR\*RE19A and HVR\*RE19B, will provide respective monitoring for Unit 3 final gas effluents.



### Safety Evaluation Summary

Removal of the Unit 1 stack gas high range radiation monitor from service in order to facilitate installation of the new WRGM creates an inoperable condition per the REM/ODCM. As such, preplanned compensatory actions will be initiated. The preplanned compensatory actions will be the same as if the monitor became inoperable in place. No new actions beyond those presently defined would be required to address removal of the Unit 1 stack gas high range radiation monitor. Existing post-accident monitoring procedures specifically address monitoring requirements in the event that the Kaman high range effluent monitor is unavailable post-accident.

Removal of the Unit 1 stack gas normal range radiation monitor from service at the same time as the high range monitor in order to facilitate installation of the new WRGM creates an inoperable condition per the REM/ODCM (for Unit 1) and Technical Specification (for Unit 2 and Unit 3). As such, preplanned alternate monitoring (PPAM) will be initiated. The PPAM will be the same as if the monitor became inoperable in normal use. The use of grab samples and separate iodine and particulate monitoring in accordance with existing procedures will meet the normal compensatory action requirements. The addition of a CAM will provide additional monitoring capability to help meet the PPAM requirements. No new actions beyond those presently defined would be required to address removal of the Unit 1 stack gas normal range radiation monitor.

No new interfaces with important to safety equipment are being created by this DCR. The new WRGM effluent monitor does not interface with any equipment deemed important to safety and does not perform any automatic actions which could increase the consequences of any malfunctions in equipment deemed important to safety. Components installed in the Unit 2 Control Room have been analyzed to ensure that they do not impact the seismic II/I adequacy of Panel RC 14E. Channel failures due to the use of digital components within the new equipment will not increase the frequency or types of RMS failures.

Operators will remain able to assess post-accident on-site radiological conditions and their impact on 10CFR100 limits during and after implementation of this change. Revisions made to the REM/ODCM to reflect equipment changes does not affect the ability of the plant to determine off-site doses.

Installation of cables within the Unit 2 Cable Vault will not create a new fire hazard and will not cause any combustible loading increase. Placement of new cables within existing trays will not provide any new fire or combustibles path during installation.

The proposed changes do not involve an unreviewed safety question.

**Attachment 2 to B18346**

**Millstone Unit 1**

**Commitment Changes**

1. **RCR-29357**

From Northeast Utilities' Letter B15928, "Haddam Neck Plant, Millstone Nuclear Power Station, Unit Nos. 1, 2, and 3, Response to NRC Generic Letter 96-04, Boraflex Degradation in Spent Fuel Pool Storage Racks," dated 10/24/96

**Original Commitment**

*NNECO has committed to performing blackness testing about every two years for Millstone Unit 1.*

**Change**

The commitment has been revised to state:

*Millstone Unit 1 will perform blackness testing on three year intervals.*

**Discussion**

Unit 1 Engineering has completed a technical evaluation M1-EV-00-0005 which evaluated the acceptability of changing the frequency of blackness testing to once every three years. There are four reasons that form the acceptability of this change:

- A three year frequency is consistent with the rack manufacturer and criticality analysis supplier's (Holtech) recommendation.
- The gamma dose to the Boraflex will increase at a very slow rate, such that every three years, the Boraflex will receive less than  $2 \times 10^9$  rads. A dose rate of  $2 \times 10^9$  rads was the original basis for selecting the two year interval. Since fresh fuel is not being added to the pool, it will now take three years instead of two to reach the same gamma dose.
- Boraflex shrinkage is proceeding slowly as shown by the coupon and blackness testing.
- Blackness testing is not the primary means of monitoring Boraflex erosion, but rather a check on whether Boraflex is absent or missing. Coupon testing is used to monitor erosion. Changing the blackness testing interval will have no effect on erosion. Coupon testing will remain on the same interval. Samples were withdrawn in November 2000.

The technical evaluation concluded that it was acceptable to change the Boraflex blackness test interval to three years and still assure that the MP1 spent fuel pool K-effective will remain less than 0.90. Therefore, based on the technical evaluation, the original intent of the commitment "confirm that the criticality assumptions remain valid" is maintained.

**2. RCR-39803**

This change was previously submitted in letter B18296 "Change to Commitment on Fuel Assembly Movement," on January 3, 2001.

**Commitment text as modified in letter B18128 dated June 30, 2000:**

*No unaffected, irradiated fuel assemblies will be moved within the spent fuel pool until the raised fuel assemblies have been fully seated. In the event that an assembly cannot be fully seated, no unaffected, irradiated fuel assemblies will be moved until it is determined that either the assembly configuration has been previously evaluated, or an evaluation of the configuration is performed.*

**Change**

This commitment has been revised to state:

*No unaffected, irradiated fuel assemblies will be moved within the spent fuel pool until the raised fuel assemblies have been fully seated except to resolve regulatory or safety issues.*

*In the event that an assembly must be moved, the movement will not take place until it is determined that the proposed movement is bound by a previous evaluation, or an evaluation of the proposed move is performed.*

*In the event that an assembly cannot be fully seated, no unaffected, irradiated fuel assemblies will be moved until it is determined that either the assembly configuration has been previously evaluated, or an evaluation of the configuration is performed.*

**Discussion**

There was no safety significance associated with this change. This commitment is implemented in Unit 1 procedures as a restriction on use and movement of fuel assemblies. By procedure, each proposed fuel movement is reviewed against the restrictions to verify no conflict exists. The commitment change will ensure that the proposed fuel movement is either bound by the existing evaluation or a new analysis of the proposed move is conducted. This ensures that the potential safety consequences are appropriately evaluated prior to fuel movement.