

Dated: March 17, 1999.

**Linda Allen-Benton,**

*Acting Division Director, Human Resource Management.*

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## NUCLEAR REGULATORY COMMISSION

[Docket Nos. STN 50-454, STN 50-455, STN 50-456, STN 50-457]

### Commonwealth Edison Company; Notice of Issuance of Amendments to Facility Operating Licenses

The U.S. Nuclear Regulatory Commission (Commission) has issued Amendment No. 106 to Facility Operating License No. NPF-37, Amendment No. 106 to Facility Operating License No. NPF-66, Amendment No. 98 to Facility Operating License No. NPF-72, and Amendment No. 98 to Facility Operating License No. NPF-77, issued to Commonwealth Edison Company (the licensee), which revised the operating licenses and the Technical Specifications for operation of Byron Station, Units 1 and 2, located in Ogle County, Illinois and Braidwood Station, Units 1 and 2, located in Will County, Illinois. The amendments are effective as of the date of issuance.

The amendments revise the Byron and Braidwood Technical Specifications (Appendix A of the operating licenses) in their entirety to be consistent with the Improved Standard Technical Specifications conveyed by NUREG-1431 (April 1995). In addition, the amendments add two new license conditions to Appendix C of the Byron and Braidwood operating licenses regarding surveillance requirements and delete one existing license condition.

The application for the amendments complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license amendments.

Notice of Consideration of Issuance of Amendments to Facility Operating Licenses and Opportunity for a Hearing in connection with this action was published in the **Federal Register** on October 28, 1998 (63 FR 57710), October 29, 1998 (63 FR 58072), and November 2, 1998 (63 FR 58794). No request for a hearing or petition for leave to intervene was filed following these notices.

The Commission has prepared an Environmental Assessment related to the action and has determined not to prepare an environmental impact statement. Based upon the environmental assessment, the Commission has concluded that the issuance of the amendment will not have a significant effect on the quality of the human environment (63 FR 70440).

For further details with respect to the action see (1) the application for amendment dated December 13, 1996, as supplemented by letters dated February 24, September 2, October 10, October 28 and December 8, 1997, and January 27, January 29, February 6, February 13, February 24, February 26, April 14, April 16, June 1, June 2, July 2, July 8, July 30, July 31, August 11, August 12, September 21, September 25, October 1, October 2, October 5, October 15, October 23, November 6, November 19, November 23, November 30 and December 14, 1998, (2) Amendment No. 106 to Facility Operating License No. NPF-37, Amendment No. 106 to Facility Operating License No. NPF-66, Amendment No. 98 to Facility Operating License No. NPF-72, and Amendment No. 98 to Facility Operating License No. NPF-77, (3) the Commission's related Safety Evaluation, and (4) the Commission's related Environmental Assessment. All of these items are available for public inspection at the Commission's Public Document Room, the Gelman Building, 2120 L Street NW., Washington, DC, and at the local public document room located at: for Byron, The Byron Public Library District, 109 N. Franklin, P.O. Box 434, Byron, Illinois 61010; for Braidwood, the Wilmington Public Library, 201 S. Kankakee Street, Wilmington, Illinois 60481.

Dated at Rockville, Maryland, this 22nd day of December, 1998.

For the Nuclear Regulatory Commission.

**Ramin R. Assa,**

*Project Manager, Project Directorate III-2, Division of Reactor Projects—III/IV, Office of Nuclear Reactor Regulation.*

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## NUCLEAR REGULATORY COMMISSION

[Docket No. 50-336]

### Northeast Nuclear Energy Company, et al. (Millstone Nuclear Power Station, Unit 2); Exemption

**I**

Northeast Nuclear Energy Company, et al., is the holder of Facility Operating License No. DPR-65 which authorizes operation of Millstone Nuclear Power Station, Unit 2. Millstone Nuclear Power Station, Unit 2, is a pressurized water reactor located in Waterford, Connecticut. The license provides, among other things, that the facility is subject to all rules, regulations, and orders of the U.S. Nuclear Regulatory Commission (the Commission or NRC) now or hereafter in effect.

**II**

Appendix R, "Fire Protection Program for Nuclear Power Facilities Operating Prior to January 1, 1979," to Title 10 of the Code of Federal Regulations (10 CFR) Part 50, establishes fire protection features required to satisfy General Design Criterion 3, "Fire protection," of Appendix A to 10 CFR Part 50, with respect to certain generic issues for nuclear power plants licensed to operate prior to January 1, 1979. By letter dated July 31, 1998, as supplemented by letters dated September 24 and November 13, 1998, Northeast Nuclear Energy Company (NNECO), the licensee for Millstone Nuclear Power Station, Unit 2, requested four exemptions from certain requirements of 10 CFR Part 50 Appendix R. Specifically, for the Intake Structure (Appendix R Fire Area R-16) and the East 480 Volt Switchgear Room (Appendix R Fire Area R-11) the licensee requested exemptions from the requirements of 10 CFR Part 50, Appendix R, Section III.G.3 to the extent it requires the licensee to have automatic fire suppression systems in these areas. For the Charging Pump Room (Appendix R Area R-4) the licensee requested an exemption from the requirements of 10 CFR Part 50, Appendix R, Section III.G.2 to the extent that it requires the licensee to meet the specific requirements of either Section III.G.2.a, b, or c. Finally, the licensee requested an exemption from the requirements of 10 CFR Part 50, Appendix R, Section III.J to the extent that it requires emergency lighting units with at least an 8-hour battery power supply to light all areas needed for operation of safe shutdown equipment and in access and egress routes thereto.

**III***Intake Structure***Background**

As a result of a design basis review at Millstone, Unit 2, the licensee determined that the Intake Structure does not fully meet the requirements of 10 CFR Part 50, Appendix R. The Intake Structure is an alternate shutdown area. Therefore, it is required to meet Appendix R, Section III.G.3. Section III.G.3 requires that a fixed fire suppression system be installed in an alternate shutdown area. The licensee requested an exemption from this requirement.

**Description**

The Millstone Unit 2 Intake Structure is an alternate shutdown area because a fire in the Intake Structure could render all three of the service water pumps inoperable and the loss of all three service water pumps renders the emergency diesel generators inoperable. Alternative shutdown capability is provided by the backfeed of AC power from Millstone, Unit 1 for provision of power to Millstone, Unit 2.<sup>1</sup> This strategy eliminates the need to provide a service water pump to cool a Millstone, Unit 2 emergency diesel generator in the event of a fire in the Intake Structure.

The Intake Structure is a reinforced concrete structure and constitutes Fire Area R-16 in the Appendix R analysis. The structure consists of three fire hazard analysis (FHA) fire zones; I-1A, I-1B, and I-1C. The structure is constructed of concrete floors, ceiling and walls. Reinforced concrete walls separate the three fire zones within the Intake Structure. These walls are a minimum of 12" thick. The ceiling height within the zones is approximately 24'.

Three service water pumps (P-5A, 5B and 5C), three service water strainers (L-1A, L-1B and L-1C), two service water isolation valves (2-SW-97A and 2-SW-97B), and associated cables used to support Appendix R safe shutdown are located in the pump room (fire zone I-1A). The pumps are approximately 19" on center from each other. There is no Appendix R related equipment located in the sodium hypochlorite room (fire zone I-1B) or the motor

control center (MCC) room (fire zone I-1C). The service water pumps supply service water through the tube side of the turbine building component cooling water (TBCCW), reactor building component cooling water (RBCCW), and emergency diesel generator heat exchangers. Following a fire, the only short-term need for service water is diesel generator cooling. In the long term, service water is used as part of the shutdown cooling process to transfer heat from the RBCCW system to the ultimate heat sink.

A fixed fire suppression system is not provided in the Intake Structure. Detection is provided by ionization smoke detectors located in all three zones of the Intake Structure. The MCC room and the sodium hypochlorite room are each provided with one detector. The pump room is provided with eight detectors in the east portion of the structure. Three of these detectors are located directly above each of the service water pumps to provide hazard-specific coverage for the pumps. The automatic detection system alarms in the control room.

Fire hose houses are located south of the Intake Structure between the Millstone Unit 1 and Millstone Unit 2 Intake Structures. Fire extinguishers are provided in the Intake Structure. Outdoor hydrants are located adjacent to the Intake Structure.

**IV***East 480 Volt Switchgear Room***Background**

As a result of a design basis review at Millstone, Unit 2, the licensee determined that the East 480 Volt Switchgear Room does not fully meet the requirements of 10 CFR Part 50, Appendix R. Specifically, the East 480 Volt Switchgear Room is an alternate shutdown area. Therefore, it is required to meet Appendix R, Section III.G.3. Section III.G.3 requires that a fixed fire suppression system be installed in an alternate shutdown area. The licensee requested an exemption from this requirement.

**Description**

The East 480 Volt Switchgear Room is an alternate shutdown area because a fire in this area has the potential to affect the availability of electrical AC power from both emergency diesel generators. Facility Z2 power may be unavailable because 480 Volt Bus 22F and the "B" emergency diesel generator room ventilation fan (F38B) power supply (MCC B62) are located in the fire area. The "A" emergency diesel generator may be unavailable because of

fire damage to the power cable which supplies Facility Z1 Bus 24C. Coordination problems could also cause loss of the Z2 4160 volt switchgear. Thus, in the event of loss of offsite power, normal emergency AC power would not be available to shut down the plant. As discussed in an NRC letter of July 17, 1990, post-fire alternate shutdown capability for a fire in the East 480 Volt Switchgear Room is acceptable based, in part, on the ability to provide AC power from Millstone, Unit 1 via a backfeed from Unit 1 to Unit 2.

The East 480 Volt Switchgear Room is located on the 36'-6" elevation of the auxiliary building and consists of one Appendix R Fire Area (R-11). The boundaries of this area consist of a concrete floor, ceiling and walls. Barriers providing separation between this fire area and the adjacent fire areas are constructed of reinforced concrete 12" to 18" thick, or concrete blocks 8" to 12" thick. These walls contain rated fire doors and dampers, and a door that has been evaluated as adequate for the hazards.

Cables associated with Appendix R cold shutdown equipment are also located in the area. Specifically cables associated with both trains of low pressure safety injection (LPSI A and B), and reactor building component cooling water (RBCCW A and B) are located in this area. However, the licensee has planned to repair the cables, to achieve cold shutdown, in the event of a fire.

A fixed fire suppression system has not been provided in the East 480 Volt Switchgear Room. Detection is provided by an ionization smoke detection system which alarms in the Control Room. Fire extinguishers are provided in this area and in adjacent areas. A hose station is located in the adjacent turbine building and is available for use in this area.

**V***Charging Pump Area***Background**

As a result of a design basis review at Millstone Unit 2, the licensee has determined that the Charging Pump Area does not fully meet the requirements of 10 CFR Part 50, Appendix R. Specifically, the Charging Pump Area does not fully meet any of the three options of Section III.G.2, which requires separation of cables and equipment and associated non-safety circuits of redundant trains by one of the following means: (1) enclosure of cable and equipment and associated non-safety circuits of one redundant train in a fire barrier having a 3-hour fire rating; (2) a horizontal distance of more

<sup>1</sup> In its September 24, 1998, letter responding to a request for additional information, the licensee stated that the decommissioning of Millstone, Unit 1 will not affect compliance with Appendix R for Millstone, Unit 2. As decommissioning progresses, both Millstone, Unit 1 and Millstone, Unit 2, must maintain the present licensing and design basis requirements unless or until revised by appropriate means.

than 20 feet with no intervening combustible or fire hazards. In addition, fire detectors and an automatic fire suppression system shall be installed in the area; or (3) enclosure of cable and equipment and associated non-safety circuits of one redundant train in a fire barrier having a 1-hour rating. In addition, fire detectors and an automatic suppression system shall be installed in the fire area. The licensee has requested an exemption from this requirement.

As a result of its design basis review, the licensee has determined that the 3-hour rated fire wraps on the charging pump cables must be removed. Instead of relying on the protection of the fire wrap, the licensee stated that it would reroute the cables associated with the "B" and "C" charging pumps (Facility Z2 train) outside Fire Area R-4. These changes are necessary to resolve ampacity and fire rating issues with the previous fire wrap on the charging pump cables in Fire Area R-4. The licensee stated that the rerouting of the Facility Z2 cables from the "B" and "C" pump cubicles to outside the fire area is a more effective approach than relying on cables protected with fire wrap within the area of concern.

#### Description

The Charging Pump Room is located on the (-)25'-6" elevation of the Auxiliary Building. All three of the Millstone, Unit 2 charging pumps (P18A, P18B, and P18C) are located in the same Appendix R Fire Area (R-4). The area is separated into two fire zones, A-6A and A-6B. Fire zone A-6A contains the Charging Pump Cubicles and fire zone A-6B contains the Degasifier Area. Fire area R-4 is mainly separated from adjacent fire zones and areas by reinforced concrete construction. The entrance to Fire Area R-4 is separated from Fire Area R-1 by a fixed water curtain.

The charging pumps are spaced approximately 18' from each other and are separated by 10.5' high reinforced concrete missile shield walls approximately 17' on center and approximately 2' thick. A common walkway traverses the entrances to all three pump cubicles. Six lightly loaded cable trays represent the only intervening combustibles. Three raceways traverse the back of the "A" and "B" cubicles and cross the "C" cubicle. Three other raceways are in the walkway in front of the charging pump cubicles. Each charging pump contains approximately 10 gallons of lube oil. A curbed dike area has been provided for each pump. The capacity of each dike area is sufficient to contain the volume of one 55 gallon oil drum. This is

adequate to accommodate the approximately 10 gallons of lube oil contained within each respective charging pump plus any transient oil brought in for pump oil changes. The ceiling height in the Charging Pump Room is approximately 18'-0".

The entrance to the Charging Pump Room is through adjacent zone A-6B, the Degasifier Area. The entrance to the Degasifier Area is via fire zone A-1B, the RBCCW Pump and Heat Exchanger Area. This entrance is protected with a locked gate. A water curtain has been provided at the entrance to zone A-6B.

#### Charging Pump Power Cables

Charging pump "A" is powered from Facility Z1. The power cable for pump "A" is routed in conduit Z1A202 to a junction box inside the "A" cubicle into conduit Z1A636 and out of the cubicle into a common walkway which traverses the entrance to the "B" and "C" cubicles. The cable exits the fire area via a raceway immediately near the entrance to the walkway (which is also the access point into the fire area).

Charging pump "B" is the swing pump and can be powered from either Facility Z1 or Z2. The transfer switch for pump "B" power is located adjacent to the pump, mounted on the partial height wall which separates the "B" and "C" cubicles. The Facility Z1 power cable for pump "B" is routed in conduit Z1A210 from a transfer switch adjacent to the pump and out of the "B" cubicle into a raceway in the walkway. The raceway traverses the entrance to the "C" cubicle. The cable exits the fire area via a raceway immediately near the entrance to the walkway (which is also the access point into the fire area). The Facility Z2 power cable for pump "B" will be rerouted from another transfer switch near the pump, downward in new conduit Z2A1261, out of the "B" cubicle and into the adjacent fire area below (Fire Area R-5). This cable will not re-enter Fire Area R-4.

Charging pump "C" is powered from Facility Z2. The power cable for pump "C" will be re-routed from the pump downward in a new conduit, Z2A1262, out of the "C" cubicle and into Fire Area R-5, below. This cable will not re-enter Fire Area R-4.

Fire Area R-5 does not contain any Facility Z1 power cables associated with charging pump "A" or "B".

#### Charging Pump Control Cables

Charging pumps "A" and "C" have no safe-shutdown-related control cables located in Fire Area R-4.

Charging pump "B" has several control cables which are located in the Fire Area R-4. One of these control

cables (a Facility Z1 cable) is routed from a transfer switch in the "B" cubicle in conduit Z5A205 to a junction box and into conduit Z5A203, out of the "B" cubicle, and into a raceway in the walkway. The raceway traverses the entrance to the "C" cubicle and exits the fire area at the entrance to the walkway (which is also the access point into the fire area). The Facility Z2 control cable will be re-routed with the "B" pump power cable from a transfer switch near the pump downward in conduit Z2A1261, out of the "B" cubicle and into Fire Area R-5, below. All of the control cables can be isolated from P18B control circuits by operating the pump from the Fire Shutdown Panel, C10 (located in the Facility Z2 4.6kV Switchgear Room).

Fire Area R-5 does not contain any Facility Z1 control cables associated with charging pump "A" or "B".

## VI

### Yard Area

#### Background

As a result of a revised Appendix R compliance strategy for achieving safe shutdown, two additional areas have been identified by the licensee in which operation of safe shutdown equipment will be required. In the event of certain fires, operators will have to operate equipment in the Intake Structure and the Refueling Water Storage Tank (RWST) pipe enclosure. Access to these areas requires travel through portions of the yard area at Millstone, Unit 2. As these areas are not addressed in the existing exemption, the licensee determined that an exemption from Section III.J of Appendix R is required.

#### Description

The outdoor access and egress route to 4160V Bus 14H (formerly Electrical Bus 24F), extends from the east entrance of Millstone, Unit 1, Building 118 (grade elevation), east to the access roadway, south on the roadway (at the fire water tanks), and then turning west to Bus 14H.

The access route to the Intake Structure extends west from Bus 14H, then north up to the northeast corner doorway of the Millstone, Unit 2 Intake Structure.

The outdoor access/egress route to the RWST Pipe Chase also extends from the east entrance of Millstone, Unit No. 1, Building 118 (grade elevation) and east to the access roadway (at the fire water tanks). The route then continues north, west, and south along the cyclone fence, through the fenced gate between the Primary Water Storage Tank (PWST) and RWST. Inside the fenced area, the

route continues to the southern portion of the pipe chase building to the stairway platform entrance.

The licensee proposes to credit the security lighting system for access and egress route emergency lighting in lieu of an 8-hour battery supply in the yard area. The basis for this is as follows:

1. The security lighting system illuminates the required access and egress routes;

2. The security lighting power supply is backed by a security diesel generator with fuel storage capacity to ensure operation at greater than or equal to 8 hours;

3. The security generator, components, and circuits are independent from the postulated fire areas which require access to the 4160V Bus 14H enclosure, Intake Structure, or RWST Pipe Chase.

Additionally, there are portable lighting units dedicated for operations department use. The equipment is administratively controlled and located inside the Millstone, Unit 2 Control Room.

## VII

### *Evaluation*

#### Intake Structure (Fire Area R-16)

A postulated fire in the service water pump room is a cable or lube oil fire resulting from a transient ignition source, an electrical fault, or the overheating of a pump bearing. The majority of the combustible load in the area is cable insulation and lube oil. Plastic reinforced fiberglass traveling screen covers, wooden walkways, plastics, and rubber contribute relatively minor amounts to the combustible loading. The majority of the cable insulation is found in cable trays that are dispersed throughout the east portion of the structure. The cables meet the requirements for IEEE-383 qualified cables. The majority of the lube oil is contained within four non-safety-related circulating water pumps. The remaining lube oil is in other mechanical equipment in relatively small amounts dispersed throughout the pump room.

The traveling screen covers are mounted to four traveling screens. The wooden walkways cover approximately 900 ft<sup>2</sup> in the area of the traveling screens and consists of treated plywood on structural support members. These combustibles are dispersed over the west portion of the structure while the service water pumps and strainers are located on the east side. The use of transient combustible materials in the plant is limited and controlled procedurally. Intervening combustibles in the form of cable insulation are

located between the individual service water pumps and in the surrounding area. A fire in this area is expected to be restricted to the immediate area of the cables and/or equipment involved. A fire detected by the automatic detection system would result in annunciation in the Control Room which would lead to a fire brigade response and subsequent extinguishment utilizing manual fire fighting equipment.

A significant fire in the sodium hypochlorite room is not anticipated due to minimal combustible loading and limited ignition sources. The majority of this combustible loading is in the form of cable insulation. The cables meet the requirements for IEEE-383 qualified cables.

If a fire were to occur in the sodium hypochlorite room, it is expected to be contained within the zone and not affect the service water pumps or related cables in zone I-1A due to the physical barrier separation between the zones and lack of intervening combustibles. Loss of the equipment in the zone (i.e., two sodium hypochlorite solution tanks) would not affect the ability of the plant to achieve safe shutdown and does not require the plant to invoke alternate shutdown methods. Smoke detection is present in the zone and will provide warning in the Control Room of a fire in its early stages. Rapid fire brigade response and subsequent extinguishment using manual fire fighting equipment is anticipated. Although sodium hypochlorite solution is considered non-flammable and non-combustible, the fumes that may be produced when it is heated are similar to chlorine gas. The licensee stated that its fighting strategies address concerns associated with fighting a fire involving the sodium hypochlorite tanks.

A significant fire in the MCC room is not anticipated due to the limited amounts of combustible materials present. The majority of this combustible load is cable insulation in trays. The cables meet the requirements for IEEE-383 qualified cables. The majority of the remaining portion of the combustible load is contained in an approved flammable liquids storage cabinet. A fire occurring in this zone is not expected to spread beyond the general area of origin and should not affect the service water pumps or related cables in zone I-1A due to the physical fire separation between the zones and a limited amount of intervening combustibles. A normally open flood control door and unprotected cable tray penetration openings exist in the west wall to zone I-1A. The cable trays through the penetration openings

contain combustibles, in the form of cable insulation, that may contribute to fire spread between the zones.

Combustible loading is located in the area of the door opening. Due to the limited quantity of combustible material and the configuration of the combustible loading, fire is expected to be restricted to the general area of the cables and/or equipment involved. The loss of the equipment in this zone (i.e., non-safety-related MCCs B-13 and B-42) would not affect the ability of the plant to achieve safe shutdown and does not require the plant to invoke alternate shutdown methods. There is reasonable assurance that a fire would be detected by the automatic detection system in its incipient stages prior to significant flame propagation through the openings or room temperature increase that may affect the service water pumps or related cables in the adjacent pump room. Annunciation in the Control Room will lead to fire brigade response and subsequent extinguishment using manual fire fighting equipment.

As approved in the NRC letter dated July 17, 1990, safe shutdown of the plant can be achieved in the event that a fire goes undetected and renders all three service water pumps inoperable. Such a fire would cause loss of diesel generator cooling, and therefore, the diesel generators would not be available during a loss of offsite power. In that situation, power will be provided via a backfeed from Millstone, Unit 1.

The underlying purpose of the requirement to install a fixed fire suppression system in the area, as required by Section III.G.3 of Appendix R, is to limit fire damage to the dedicated or alternate shutdown capability.

Based on the amount of combustible loading and combustible loading configuration, the licensee's administrative procedures that limit and control transient combustibles, the existing fire detection system, and the expected fire brigade response and subsequent fire extinguishment, the possibility of a fire developing to involve all three of the service water pumps is not considered likely. However, if this were to occur, the loss of all three of the service water pumps would not adversely impact the safe shutdown capability of the plant, based on the ability to provide power via a backfeed from Millstone Unit 1, and the ability of the plant to make necessary repairs to a service water pump, strainer, and power cable to achieve cold shutdown. The licensee stated that the Appendix R safe shutdown strategy for a fire in the Intake Structure accounts for the loss of all three service

water pumps. In addition, the configuration for alternate shutdown in the Intake Structure had been previously found acceptable in the NRC SE dated July 17, 1990. The configuration has not changed since this approval.

On the basis of its evaluation, the staff concluded that a fixed fire suppression system is not needed to satisfy the underlying purpose of the rule.

#### East 480 Volt Switchgear Room (Fire Area R-11)

The majority of the combustible load in this area consists of cable insulation in cable trays and other electrical equipment. A postulated fire in the area would involve the cable insulation or electrical equipment. The use of transient combustible materials in the plant is limited and controlled procedurally. Potential ignition sources include cables, shorts, malfunctioning electrical equipment, and transient sources. If a fire should occur, there is reasonable assurance that it will be detected by the automatic detection system in its incipient stages prior to significant flame propagation or room temperature increase. This will result in annunciation in the Control Room, timely fire brigade response, and manual fire extinguishment utilizing available fire fighting equipment. In addition, access to the switchgear room from the continuously manned Control Room has been provided via a double door at the east end of the room. This direct route to the area will ensure rapid response by the Control Room operators to an alarm in this area.

Due to the types of combustibles and the type of electrical fires expected in this area, as well as the fact that plant operators are situated in the Control Room directly adjacent to this room, and the presence of a dedicated site fire brigade, the licensee considers manual suppression to be the preferable method of protection in this area.

In the event that there is a loss of electrical power from both emergency diesel generators, the plant is able to safely achieve shutdown by utilizing the backfeed from Millstone, Unit 1 to power the Z1 electrical facility.

The underlying purpose of the requirement to install a fixed fire suppression system in the area, as required by Section III.G.3 of Appendix R, is to limit fire damage to the dedicated or alternate shutdown capability.

Based on the amount of combustible loading and combustible loading configuration, the licensee's administrative procedures that limit and control transient combustibles, the

existing fire detection system, the expected fire brigade response and subsequent fire extinguishment, and the close proximity to the Control Room, there is reasonable assurance that a fire would not involve the entire area or spread beyond the area. The loss of the equipment in the east 480V switchgear room does not adversely impact the safe shutdown capability of the plant based on the ability to provide power via a backfeed from Millstone Unit 1.

Based on the above, the staff concluded that a fixed fire suppression system is not necessary to satisfy the underlying purpose of the rule.

#### Charging Pump Room (Fire Area R-4)

The primary combustibles in the charging pump and degasifier rooms are cable insulation and lube oil. Potential ignition sources include hot surfaces, potential cable shorts, motors, and mechanical failure. Both fire zones are provided with an ionization smoke detection system. Activation of the detection system in either zone will initiate an alarm in the Control Room.

Each charging pump contains approximately 10 gallons of lube oil. Spill containment curbing (capable of containing a 55-gallon spill) has been provided to separate each charging pump cubicle to protect each pump from a combustible liquid spill involving a redundant charging pump. The 55-gallon containment volume is adequate to accommodate the lube oil contained within each respective charging pump plus any transient oil brought in for pump oil changes. The separation provided by the reinforced concrete missile shield partial height walls prevents a direct line-of-sight between adjacent pumps. There are no openings in these walls.

Intervening combustibles between the pump areas consists of six lightly-loaded cable trays (less than 20 cables in each tray). Three raceways traverse the back of the "A" and "B" cubicles, and cross the "C" cubicle. Three other raceways are in the walkway in front of the charging pump cubicles. The cable insulation satisfies IEEE-383 qualification criteria.

A fire extinguisher is provided in the Charging Pump Area. In addition, fire extinguishers and a fire hose station are located in the adjacent zone A-1B. Transient combustible materials in the plant are controlled procedurally and there is a locked access gate at the walkway entrance. The licensee stated that firefighting strategies have been prepared and are available to assist the fire brigade in combating any expected fire.

Due to the functions required of the charging pumps in safe shutdown of the plant, the defense-in-depth concept for fire protection in this area is essential. This area is provided with detection and manual suppression in the form of a fire extinguisher. The area has low combustible loading. When the licensee completes the cable separation modifications, along with the partial barriers already in place, there is reasonable assurance that a single postulated fire would not damage redundant trains of safe shutdown equipment.

The Charging Pump Room is required to meet 10 CFR Part 50, Appendix R, Section III.G.2. Section III.G.2 requires separation of cables and equipment and associated non-safety circuits of redundant trains by any one of three optional means. The underlying purpose of the three applicable options under Section III.G.2, is to provide reasonable assurance that at least one train of equipment relied on to achieve and maintain safe shutdown is free of fire damage.

Based on the configuration of the charging pump room, the combustibles loading, the cable separation modifications, the in-place fire detection systems, the fire brigade and availability of manual fire suppression equipment, and preplanned fire fighting strategies there is reasonable assurance that a fire would not cause the loss of all charging pumps.

Based on the above, the staff concluded that requiring the licensee to meet one of the three applicable options listed in 10 CFR Part 50, Appendix R, Section III.G.2, is not necessary to satisfy the underlying purpose of the rule.

#### Yard Area

The underlying purpose of Section III.J of Appendix R is to ensure that fixed lighting of sufficient duration and reliability is provided to allow operation of equipment required for post-fire, safe shutdown of the reactor. Lighting for access/egress associated with the equipment is also required. The licensee is requesting an exemption from the access/egress portion of the Section III.J requirement relating to the yard area.

Large area applications will typically impose electrical load requirements which are beyond the normal limits of battery units. The licensee stated that the security lighting system illuminates the required access and egress routes. The power supply is backed by a security diesel generator with fuel storage capacity to ensure operation greater than or equal to 8 hours. The security generator, components, and

circuits are independent from the fire areas which require access to the 4160V Bus 14H enclosure, Intake Structure, or RWST Pipe Chase. Consistent with the defense in depth approach to fire protection, portable lighting equipment is also available and can be relied upon for use in the event of a fire.

Based on the availability and reliability of the security lighting of sufficient duration and the availability of portable lighting, there is reasonable assurance that the access/egress routes through the yard area that are relied on for safe shutdown of the facility can be accessed in the event of a fire.

On the basis of its evaluation, the staff concluded that the application of the regulation in this circumstance is not necessary to satisfy the underlying purpose of the rule.

## VIII

### Conclusions

#### Intake Structure

On the basis of its evaluation, the staff finds that special circumstances are present in that the application of the regulation in this circumstance is not necessary to achieve the underlying purpose of the rule. The licensee's request for an exemption from the requirements of Section III.G.3 of Appendix R, to the extent that it requires the installation of a fixed fire suppression system, is granted pursuant to 10 CFR 50.12(a)(2)(ii) for fire area R-16, the Intake Structure, provided the factors the licensee used to justify its exemption request are maintained. The staff concludes that the exemption is authorized by law, will not present an undue risk to the public health and safety, and is consistent with the common defense and security.

#### East 480 Volt Switchgear Room

On the basis of its evaluation, the staff finds that special circumstances are present in that the application of the regulation in this circumstance is not necessary to achieve the underlying purpose of the rule. The licensee's request for an exemption from the requirements of Section III.G.3 of Appendix R, to the extent that it requires the installation of a fixed fire suppression system, is granted pursuant to 10 CFR 50.12(a)(2)(ii) for fire area R-11, the East 480 Volt Switchgear Room, provided the factors the licensee used to justify its exemption request are maintained. The staff concludes that the exemption is authorized by law, will not present an undue risk to the public health and safety, and is consistent with the common defense and security.

#### Charging Pump Room

On the basis of its evaluation, the staff finds that special circumstances are present in that the application of the regulation in this circumstance is not necessary to achieve the underlying purpose of the rule. The licensee's request for an exemption from the requirements of Section III.G.2 of Appendix R, to the extent that it requires the licensee to meet one of the three applicable options (Section III.G.2.a, b, or c), is granted pursuant to 10 CFR 50.12(a)(2)(ii) for fire area R-4, the charging pump room, provided the factors the licensee used to justify its exemption request, including rerouting the charging pump cables, are maintained. The staff concludes that the exemption is authorized by law, will not present an undue risk to the public health and safety, and is consistent with the common defense and security.

#### Yard Area

On the basis of its evaluation, the staff finds that special circumstances are present in that the application of the regulation in this circumstance is not necessary to achieve the underlying purpose of the rule. The licensee's request for an exemption from the requirements of Section III.J of Appendix R, to the extent that it requires emergency lighting with an 8-hour battery supply for access and egress routes to safe shutdown equipment, is granted pursuant to 10 CFR 50.12(a)(2)(ii) for the yard area, provided the factors the licensee used to justify its exemption request are maintained. The staff concludes that the exemption is authorized by law, will not present an undue risk to the public health and safety, and is consistent with the common defense and security.

Dated at Rockville, Maryland, this 16th day of March 1999.

For the Nuclear Regulatory Commission.

**Roy P. Zimmerman,**

*Acting Director, Office of Nuclear Reactor Regulation.*

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## NUCLEAR REGULATORY COMMISSION

[Docket Nos. 50-424 and 50-425]

### Southern Nuclear Operating Company, Inc., et al.; (Vogtle Electric Generating Plant, Units 1 and 2); Environmental Assessment and Finding of No Significant Impact

The U.S. Nuclear Regulatory Commission (the Commission) is

considering issuance of amendments to Facility Operating License Nos. NPF-68 and NPF-81, issued to Southern Nuclear Operating Company, Inc., et al. (the licensee), for operation of the Vogtle Electric Generating Plant, Units 1 and 2, located in Burke County, Georgia.

### Environmental Assessment

#### Identification of Proposed Action

The proposed action would amend the Facility Operating Licenses (FOLs) for the Vogtle Electric Generating Plant (Vogtle), Units 1 and 2, to delete or modify certain license conditions, which have become obsolete or inappropriate. In addition, the Technical Specifications would be reconstituted to reflect revised word processing software. No change in technical requirements would be involved; however, the font would be changed to Arial 11 point; page numbers would be revised to a limiting condition for operation specific numbering scheme; and intentional blank pages would be deleted.

The proposed action is in accordance with the licensee's application for amendments dated October 15, 1998, as supplemented by letter dated November 11, 1998.

#### The Need for the Proposed Action

When the FOLs, NPF-68 and NPF-81, were issued to the licensee, the NRC staff deemed certain issues essential to safety and/or essential to meeting certain regulatory interests. Other issues were associated with adoption of the Improved Standard Technical Specifications in License Amendment Nos. 96 and 74, for Vogtle Units 1 and 2, on September 25, 1996. These issues were imposed as license conditions in the FOLs, with deadlines for their implementation. Since the units were licensed to operate in the 1980s, most of these license conditions have been fulfilled. For the license conditions that have been fulfilled, the licensee proposed to have them deleted from the FOLs. The licensee is also proposing a minor change to a license reporting requirement.

The FOLs also included exemptions from Commission regulations. The licensee stated that some exemptions have either expired, or are no longer needed since the units are in full compliance with the respective regulations. The licensee proposed to delete these exemptions from the FOLs.

The licensee also proposed to reissue the Technical Specifications without changes, to implement a change to its word processing computer software.

The proposed amendments involve reformatting and removal of conditions