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Fred Dacimo
Site Vice President

November 16, 2007

Re: Indian Point Units 2 & 3
Docket Nos. 50-247 & 50-286

NL-07-138

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

SUBJECT: **Reply to Request for Additional Information
Regarding License Renewal Application**

Reference: NRC letter dated October 24, 2007; "Requests for Additional Information for the Review of the Indian Point Nuclear Generating Unit Nos. 2 and 3, License Renewal Application".

Dear Sir or Madam:

Entergy Nuclear Operations, Inc is providing, in Attachment I, the additional information requested in the referenced letter pertaining to NRC review of the License Renewal Application for Indian Point 2 and Indian Point 3. The additional information provided in this transmittal addresses staff questions regarding Fire Protection Systems and Components.

There are no new commitments identified in this submittal. If you have any questions or require additional information, please contact Mr. R. Walpole, Manager, Licensing at (914) 734-6710.

I declare under penalty of perjury that the foregoing is true and correct. Executed on 11/16/07

Sincerely,

Fred R. Dacimo
Site Vice President
Indian Point Energy Center

cc: next page

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cc: Mr. Bo M. Pham, NRC Environmental Project Manger
Ms. Kimberly Green, NRC Safety Project Manager
Mr. John P. Boska, NRC NRR Senior Project Manager
Mr. Samuel J. Collins, Regional Administrator, NRC Region I
Mr. Mark Cox, NRC Senior Resident Inspector, IP2
Mr. Paul Cataldo, NRC Senior Resident Inspector, IP3
Mr. Paul D. Tonko, President, NYSERDA
Mr. Paul Eddy, New York State Dept. of Public Service

ATTACHMENT I TO NL-07-138

REPLY TO NRC REQUEST FOR ADDITIONAL INFORMATION

REGARDING

LICENSE RENEWAL APPLICATION

(Fire Protection System and Components)

**ENTERGY NUCLEAR OPERATIONS, INC
INDIAN POINT NUCLEAR GENERATING UNIT NOS. 2 and 3
DOCKETs 50-247 and 50-286**

INDIAN POINT NUCLEAR GENERATING UNIT NOS. 2 AND 3
LICENSE RENEWAL APPLICATION
REQUESTS FOR ADDITIONAL INFORMATION

The staff reviewed the Indian Point Nuclear Generating Unit Nos. 2 and 3 (IP2 and IP3) license renewal application (LRA), updated final safety analysis report (UFSAR), Section 9.5.1, "Fire Protection System," and the following fire protection current licensing basis documents listed in the IP2 and IP3 Operating License Conditions 2.K. and 2.H, respectively:

U.S. Nuclear Regulatory Commission (NRC) Fire Protection Safety Evaluation Reports (SERs)

IP2: November 30, 1977, February 3, 1978, January 31, 1979, October 31, 1980, August 22, 1983, March 30, 1984, October 16, 1984, September 16, 1985, November 13, 1985, March 4, 1987, January 12, 1989, and March 26, 1996.

IP3: September 21, 1973, March 6, 1979, May 2, 1980, November 18, 1982, December 30, 1982, February 2, 1984, April 16, 1984, January 7, 1987, September 9, 1988, October 21, 1991, April 20, 1994, January 5, 1995, and supplements.

The staff has identified that fire protection systems and components discussed in the following sections have been excluded from the scope of license renewal and an aging management review (AMR). These systems and components were not included in the license renewal boundaries and appear to have fire protection intended functions required for compliance with Title 10 of the *Code of Federal Regulations* (CFR) 50.48, "Fire protection," as stated in 10 CFR 54.4. Therefore, in order to complete our review, the staff requires responses to the following requests for additional information (RAIs).

RAI 2.3A.3.11-1

The following LRA drawings show fire protection system components as not within the scope of license renewal:

LRA drawing LRA-227551-0 shows the following fire protection system components as not within the scope of license renewal (i.e., not highlighted in green):

- Maintenance and Outage Building
- Primary Auxiliary Building and Boric Acid Building Charcoal Filter Deluge System

LRA drawing LRA-227552-0 shows the following fire protection system components as not within the scope of license renewal (i.e., not highlighted in green):

- #11 Fire Pump Room
- Fuel Oil Tank/Water Meter House
- Ignition Oil Tank and Pump Room Deluge System
- Main and Auxiliary Transformer Deluge System

LRA drawing LRA-227553-0 shows the following fire protection system components as not within the scope of license renewal (i.e., not highlighted in green):

- Staircase No. 2, 3, 4, 5 and 6
- Turbine Oil Piping System

LRA drawing LRA-227554-0 shows the following fire protection system components as not within the scope of license renewal (i.e., not highlighted in green):

- Staircase No. 1, 8, and 9

LRA drawing LRA-9321-4006-0 shows following fire protection system components as not within the scope of license renewal (i.e., not highlighted in green):

- Fire Hydrants
- Fire Hose Connections
- Fire Hose Stations

The staff requests that the applicant verify whether the above components are within the scope of license renewal in accordance with 10 CFR 54.4(a) and subject to an AMR in accordance with 10 CFR 54.21(a)(1). If these components are excluded from the scope of license renewal and are not subject to an AMR, the staff requests that the applicant provide justification for the exclusion.

Response for RAI 2.3A.3.11-1

LRA drawing LRA-227551-0 shows that fire protection system components associated with the following are not in scope nor subject to aging management review (i.e., not highlighted in green).

- Maintenance and Outage (MO) Building

The maintenance and outage building, adjacent to the fuel storage building of IP2, houses offices and facilities for maintenance personnel. The maintenance and outage building fire protection components are not required for 10 CFR 50.48 as the building does not house and is not in proximity to safety-related equipment and does not contain equipment required for safe shutdown. The maintenance and outage building fire protection components are not described in the January 31, 1979 fire protection SER.

- Primary Auxiliary Building (PAB) Charcoal Filter Deluge System

Drawing LRA-22751-0 detail E shows piping and solenoid valves downstream of FP-587 for the PAB charcoal filter deluge system. These portions of the system were inadvertently not highlighted on the drawing as subject to aging management review for license renewal. The PAB charcoal filter deluge system is in scope and subject to aging management review. Applicable component types are included in LRA table 2.3.3-11-IP2 with the aging management review results in LRA table 3.3.2-11-IP2.

- Boric Acid Building Charcoal Filter Deluge System

The boric acid building charcoal filter deluge system is in scope and subject to aging management review as shown on drawing LRA-227551-0 in detail E and detail F. Applicable component types are included in LRA table 2.3.3-11-IP2 with the aging management review results in LRA table 3.3.2-11-IP2.

LRA drawing LRA-227552-0 shows the following fire protection system components are not in scope (i.e., not highlighted in green).

- No.11 Fire Pump Room

The portion of the fire protection system labeled on drawing LRA-227552-0 as No.11 fire pump room includes systems for gas turbine No. 1 transformer, expansion of the maintenance area, the L & P transformer, the bulk H₂ storage (screenwell house) for unit 1, and the maintenance material processing area. This portion of the system is not required to meet 10 CFR 50.48 requirements for the following reasons. Deluge valve FP-294 feeds the line that is blind flanged to the gas turbine No. 1 transformer which is retired in place. A fire in this area cannot adversely impact safety-related equipment. Deluge valve FP-1008 feeds the expansion of the maintenance area which houses no safety-related equipment. A fire in this area cannot affect areas containing safety-related equipment. Deluge valve FP-242 supplies the spray system No. 1 which protects the L & P transformer which is retired in place. A fire in this area cannot adversely impact safety-related equipment. Deluge valve FP-261 supplies the line for spray system No. 4 to the bulk H₂ storage (screenwell house) for unit 1 and deluge valve FP-890 supplies the line for the maintenance material processing area. These areas do not contain safety-related equipment and a fire in the areas cannot affect areas containing safety-related equipment. None of these fire protection systems are described in the January 31, 1979 fire protection SER.

- Fuel Oil Tank/Water Meter House

As shown on drawing LRA-227552-0 detail J (fuel oil tank/water meter house), hydrants No. 18 and No. 19 provide fire protection coverage for fuel oil storage tanks. The fuel oil storage tanks are associated with house service boiler and ignition oil tanks. These fuel oil tanks have no intended function for license renewal. They are not required to meet 10 CFR 50.48 requirements since a fire in this portion of the yard cannot affect safety-related or safe shutdown equipment. In addition, this equipment is not described in the January 31, 1979 fire protection SER.

Fire protection components associated with the water meter house (piping and valves) are in scope and subject to aging management review and are shown on drawing LRA-192505. These components (piping and valves) are part of the city water system discussed in section 2.3.3.17 of the LRA.

- Ignition Oil Tank and Pump Room Deluge System

The ignition oil tank and pump rooms are in the IP1 superheater building (not adjacent to IP2 areas containing safety-related equipment). These rooms do not contain safety-related equipment or systems required for safe shutdown. Three-hour rated walls, penetrations, and doors will prevent a fire in the ignition oil tank and pump room from spreading to safety-related areas associated with IP2. The ignition oil tank and pump room deluge system is not required to meet 10 CFR 50.48 and is not described in the January 31, 1979 fire protection SER.

- Main and Auxiliary Transformer Deluge System

The main and auxiliary transformer deluge systems and their associated components for the oil filled transformers adjacent to the control building were initially determined to have no license renewal intended function. They were considered required only to protect the transformers to satisfy requirements of the plant insurance carrier. However, the spray systems provide for defense in depth in addition to installed 3 hour rated fire barriers and are now considered in scope and subject to aging management review for license renewal. Applicable component types that are subject to aging management review are included in LRA table 2.3.3-11-IP2 with the aging management review results in LRA table 3.3.2-11-IP2.

LRA drawing LRA-227553-0 shows fire protection system components associated with the following as out of scope (i.e., not highlighted in green).

- Staircase No. 2, 3, 4, 5 and 6

Staircase No. 2 is located in the IP1 service building adjacent to the IP1 turbine building. The service building for IP1 houses administrative offices. Staircases No. 5 and No. 6 are located in the IP1 superheater building at the south exterior wall. None of these areas are in proximity to areas containing safety-related equipment. Fires in the areas of staircases No. 2, 5, & 6 are prevented from spreading to nearby safety-related areas (IP2 control building) by three-hour rated walls, penetrations, and doors. Fire protection equipment in staircase No.'s 2, 5, & 6 are not required for 10 CFR 50.48 and are not described in the January 31, 1979 fire protection SER.

Fire protection equipment for staircase No. 4 at EL. 53, located in the control building, is in scope and subject to aging management review as shown on drawing LRA-227553-0 at detail WW.

The supply to the radwaste/HP offices downstream of valve FP-363 and components downstream of normally closed valve FP-155 are not required for 10 CFR 50.48 because these areas do not contain safety-related equipment nor can a fire in the radwaste/HP offices impact areas containing safety-related equipment.

Fire protection equipment for staircase No. 3 at EL. 15', 33', and 53' in the control building is in scope and subject to aging management review as shown on drawing LRA-227553-0 at detail W.

The supply to the technical support building (T.S.C.) downstream of valve FP-865 is not required for 10 CFR 50.48 because this area does not contain safety-related equipment nor can a fire in the technical support building impact areas containing safety-related equipment.

- Turbine Oil Piping System

Turbine oil piping sprinkler system components downstream of valve FP-65 provide coverage for the file room, one stop shop building, and the work control center building, all of which don't contain nor can impact areas containing safety-related equipment. The turbine oil piping sprinkler system is therefore not required for compliance with 10 CFR 50.48. However, hose reel FP-66 and associated piping are in scope and subject to aging management review for license renewal as shown on drawing LRA-227553-0 at detail X.

LRA drawing LRA-227554-0 shows fire protection system components associated with the following as out of scope (i.e., not highlighted in green).

- Staircase No. 1, 8, and 9

Staircase 1 is located in the IP1 nuclear service building and staircases 8 and 9 are located in the IP1 nuclear service chemical system building. The nuclear service building is adjacent to IP1 containment building and houses no safety-related equipment. The nuclear service chemical system building is adjacent to IP1 containment building and houses no safety-related equipment. These buildings are not in proximity to areas containing safety-related equipment. Fires in the areas of staircases No. 1, 8, & 9 are prevented from spreading to safety-related areas (control building) by three-hour rated walls, penetrations, and doors. Fire protection equipment in staircases No. 1, 8, & 9 are not required for 10 CFR 50.48. These staircases are associated with IP1 and the associated fire protection system components are no longer required for compliance with 10 CFR 50.48 since the IP1 operating license was revoked in June 1980 as stated in the October 31, 1980 supplement to the January 31, 1979 fire protection SER.

LRA drawing LRA-9321-4006-0 shows the following fire protection system components as not within the scope of license renewal (i.e., not highlighted in green):

- Fire Hydrants – Hydrants for IP2 screenwell structure (hydrants 21 and 22), main transformer yard (hydrant 25), EDG building (hydrant 27), primary aux building (hydrants 26, 28, and 29), and auxiliary feed pump building (hydrant 24) are required for 10 CFR 50.48. These hydrants are highlighted on LRA drawing LRA-9321-4006-0.

Hydrants that are not highlighted are those for IP1 screenwell house (hydrants 11 and 12), IP1 fuel oil tank farm (hydrants 17 and 18), east of IP1 fuel handling building (hydrant 16), station security building (hydrant 15), and southeast of IP1 containment building (hydrants 13 and 14). These hydrants are not required for 10 CFR 50.48. IP1 screenwell house does contain equipment for safe shutdown in the event of fire in

another area. Fires in multiple fire zones are not assumed so a fire in the screenwell house is not a concern. The other areas listed do not present a significant fire hazard to areas containing equipment used for safe shutdown.

- Fire Hose Connections – fire hose connections that are not highlighted on drawing LRA-9321-4006-0 coordinates (B, 2) are located at IP1 screenwell house dock and are not required for 10 CR 50.48. The hose connection at IP1 screenwell house is isolated with a blank flange.
- Fire Hose Stations – the fire hose stations that are not highlighted on drawing LRA-9321-4006-0 are in the IP1 fuel handling building and are not required for 10 CFR 50.48. This area does not contain equipment used for safe shutdown and is an area that does not present a significant fire hazard to areas containing equipment used for safe shutdown. Fire hose stations associated with IP1 and the associated fire protection system components are no longer required for compliance with 10 CFR 50.48 since the IP1 operating license was revoked in June 1980 as stated in the October 31, 1980 supplement to the January 31, 1979 fire protection SER.

RAI 2.3A.3.11-2

LRA Tables 2.3.3-11-IP2 and 2.3.3-11-IP3 exclude several types of fire protection components that are discussed in the SERs and/or UFSAR, and which also appear on the LRA drawings as within the scope of license renewal (i.e., highlighted in green). These components are listed below:

- hose connections
- hose racks
- yard hose houses
- interior fire hose stations
- pipe fittings
- pipe supports
- couplings
- threaded connections
- restricting orifices
- interface flanges
- chamber housings
- heat-actuated devices
- tank heaters
- thermowells
- water motor alarms
- expansion joint
- filter housing
- gear box housing
- heat exchanger (bonnet)
- heat exchanger (shell)
- heat exchanger (tube)
- heater housing
- diesel driven fire pump engine's muffler • orifice
- sight glass
- strainer housing
- turbocharger housing

- flexible hose
- latch door pull box
- pneumatic actuators
- actuator housing
- dikes for oil spill confinement
- buried underground fuel oil tanks for emergency diesel generators
- expansion tank
- fire water main loop valves
- post indicator valves
- jacket cooling water keepwarm pump and heater
- lubricating oil collection system components for each reactor coolant pump
- lubricating oil cooler
- auxiliary lubricating oil makeup tank
- rocker lubricating oil pump
- floor drains and curbs for fire-fighting water
- backflow prevention devices
- flame retardant coating for cables
- fire retardant coating for structural steel supporting walls and ceilings

For each, determine whether the component should be included in Tables 2.3.3-11-IP2 and 2.3.3-11-IP3 as component types subject to an AMR, and if not, justify the exclusion.

Response for RAI 2.3A.3.11-2

The following provides the results of scoping and screening for the listed fire protection system component types.

- Hose connections - As stated in LRA section 2.0 page 2.0-1, the component type "piping" includes pipe, pipe fittings (such as elbows and reducers), flow elements, orifices, and thermowells. Hose connections are pipe fittings subject to aging management review as indicated in LRA tables 2.3.3-11-IP2 and 2.3.3-11-IP3 under the component type "piping" with the aging management review results in LRA tables 3.3.2-11-IP2 and 3.3.2-11-IP3.
- Hose racks – Hose racks are subject to aging management review and are included in the structural aging management review as component type "fire hose reels". This item is included in LRA table 2.4-4 with the aging management review results in LRA table 3.5.2-4.
- Yard hose houses – Yard hose houses (small building over hydrants which contains fire hose and fire fighting equipment) are not subject to aging management review. Failure of yard hose house would not prevent fire suppression capability of the associated hydrant.
- Interior fire hose stations – Interior fire hose stations are subject to aging management review. They are included in LRA table 2.4-4 under component type "fire hose reels" with the aging management review results in LRA table 3.5.2-4.
- Pipe fittings – As stated in LRA section 2.0 on page 2.0-1, the component type "piping" in component lists may include pipe, pipe fittings (such as elbows and reducers), flow elements, orifices, and thermowells. Pipe fittings are subject to aging management review and included in LRA tables 2.3.3-11-IP2 and 2.3.3-11-IP3 under the component type "piping" with the aging management review results in LRA tables 3.3.2-11-IP2 and 3.3.2-11-IP3.

- Pipe supports – Pipe supports are subject to aging management review and are included in the structural aging management review as component type "component and piping supports". This item is included in LRA table 2.4-4 with the aging management review results in LRA table 3.5.2-4.
- Couplings – As stated in LRA section 2.0 page 2.0-1, the component type "piping" in component lists may include pipe, pipe fittings (such as elbows and reducers), flow elements, orifices, and thermowells. Couplings are subject to aging management review and included in LRA tables 2.3.3-11-IP2 and 2.3.3-11-IP3 under the component type "piping" with the aging management review results in LRA tables 3.3.2-11-IP2 and 3.3.2-11-IP3.
- Threaded connections - As stated in LRA section 2.0 page 2.0-1, the component type "piping" in component lists may include pipe, pipe fittings (such as elbows and reducers), flow elements, orifices, and thermowells. Threaded connections are considered pipe fittings and are included in LRA tables 2.3.3-11-IP2 and 2.3.3-11-IP3 under the component type "piping" with the aging management review results in LRA tables 3.3.2-11-IP2 and 3.3.2-11-IP3.
- Restricting orifices – As stated in LRA section 2.0 page 2.0-1, the component type "piping" in component lists may include pipe, pipe fittings (such as elbows and reducers), flow elements, orifices, and thermowells. Restricting orifices in the fire protection water systems are included in the "piping" line item in LRA tables 2.3.3-11-IP2 and 2.3.3-11-IP3 with the aging management review results in LRA tables 3.3.2-11-IP2 and 3.3.2-11-IP3.
- Interface flanges - As stated in LRA section 2.0 page 2.0-1, the component type "piping" in component lists may include pipe, pipe fittings (such as elbows and reducers), flow elements, orifices, and thermowells. Interface flanges are subject to aging management review and included in LRA tables 2.3.3-11-IP2 and 2.3.3-11-IP3 under the component type "piping" with the aging management review results in LRA tables 3.3.2-11-IP2 and 3.3.2-11-IP3.
- Chamber housings – Deluge valves for IP2 and IP3 include a retard chamber, piping, and valves whose purpose is to prevent false alarms due to system pressure surges and to provide a flow path to the water gong alarm during system actuation. Since failure of these components of the deluge valve would not prevent fire suppression capability for the sprinkler system, they are not subject to aging management review.
- Heat-actuated devices – Heat actuated devices are active components not subject to aging management review.
- Tank heaters – Tank heaters are active components not subject to aging management review.
- Thermowells – Thermowells are included in tables 2.3.3-11-IP2 and 2.3.3-11-IP3 with the aging management review results in LRA tables 3.3.2-11-IP2 and 3.3.2-11-IP3.
- Water motor alarms – Water motor alarms are local bells mechanically driven by water flow. Water motor alarms are active components not subject to aging management review.
- Expansion joint – Expansion joint is a component type in the fire pump diesel exhaust system and is included in tables 2.3.3-11-IP2 and 2.3.3-11-IP3 with the aging management review results in LRA tables 3.3.2-11-IP2 and 3.3.2-11-IP3.

- Filter housing – Filter housing is only associated with IP3 components shown on drawing LRA-9321-40903-0. Filter housing is a component type shown in table 2.3.3-11-IP3 with the aging management review results in LRA table 3.3.2-11-IP3.
- Gear box housing – Gear box housings are part of the vendor supplied fire pump diesel engine assembly which is an active component not subject to aging management review.
- Heat exchanger (bonnet) – There is no heat exchanger (bonnet) associated with the fire protection systems.
- Heat exchanger (shell) - There is no heat exchanger (shell) associated with the fire protection systems.
- Heat exchanger (tube) - There is no heat exchanger associated with the fire water systems. The IP3 CO2 system includes a heat exchanger consisting a coil (tube) in air, which is addressed in LRA table 2.3.3.12-IP3 as component type heat exchanger (tube) with the aging management review results in LRA table 3.3.2-12-IP3.
- Heater housing – Heater housings are included in tables 2.3.3-11-IP2 and 2.3.3-11-IP3 with the aging management review results in LRA tables 3.3.2-11-IP2 and 3.3.2-11-IP3.
- Diesel driven fire pump engine muffler – The diesel driven fire pump engine muffler is component type “silencer” included in tables 2.3.3-11-IP2 and 2.3.3-11-IP3 with the aging management review results in LRA tables 3.3.2-11-IP2 and 3.3.2-11-IP3.
- Orifice - As stated in LRA section 2.0 page 2.0-1, the component type “piping” in component lists may include pipe, pipe fittings (such as elbows and reducers), flow elements, orifices, and thermowells. Orifices in the fire protection water systems are included in LRA tables 2.3.3-11-IP2 and 2.3.3-11-IP3 under the component type “piping” with the aging management review results in LRA tables 3.3.2-11-IP2 and 3.3.2-11-IP3.
- Sight glass – Sight glasses are not a component type in the fire protection systems subject to aging management review.
- Strainer housing – Strainer housings are included in tables 2.3.3-11-IP2 and 2.3.3-11-IP3 with the aging management review results in LRA tables 3.3.2-11-IP2 and 3.3.2-11-IP3.
- Turbocharger housing – Turbocharger housing is a part of the fire pump diesel engine assembly, which is an active component not subject to aging management review.
- Flexible hose – Flexible hoses are replaced at specified intervals and are therefore not subject to aging management review per 10 CFR 54.21(a)(1)(ii).
- Latch door pull box – Latch door pull boxes are active electro-mechanical devices not subject to aging management review.
- Pneumatic actuators – Pneumatic actuators are active components not subject to aging management review.
- Actuator housing – The actuator housing is part of the valve actuator which is an active assembly with no pressure boundary function and therefore is not subject to aging management review.
- Dikes for oil spill confinement – There are no dikes for oil spill confinement within the scope of license renewal for fire protection.
- Buried underground fuel oil tanks for emergency diesel generators – Buried underground

fuel oil tanks for the emergency diesel generators are addressed in LRA section 2.3.3.13, Fuel Oil.

- Expansion tank - Expansion tank is not a component in the fire water system.
- Fire water main loop valves – Fire water main loop valves are included in component type “valve body” and are included in tables 2.3.3.11-IP2 and 2.3.3.11-IP3 with the aging management review results in LRA tables 3.3.2-11-IP2 and 3.3.2-11-IP3.
- Post indicator valves - Post indicator valves are included in component type “valve body” and are included in tables 2.3.3.11-IP2 and 2.3.3.11-IP3 with the aging management review results in LRA tables 3.3.2-11-IP2 and 3.3.2-11-IP3.
- Jacket cooling water keepwarm pump and heater – The jacket cooling water keepwarm pump and heater are parts of the diesel engine assembly, which is an active assembly not subject to aging management review.
- Lubricating oil collection system components for each reactor coolant pump – The lubricating oil collection system components for each reactor coolant pump are subject to aging management review and are addressed in LRA section 2.3.3.12 and tables 3.3.2-12-IP2 and 3.3.2-12-IP3 with the aging management review results in LRA tables 3.3.2-12-IP2 and 3.3.2-12-IP3.
- Lubricating oil cooler – The lubricating oil cooler is a part of the fire pump diesel engine assembly, which is an active assembly not subject to aging management review.
- Auxiliary lubricating oil makeup tank – The auxiliary lubricating oil makeup tank is not a component in the fire protection systems.
- Rocker lubricating oil pump – The rocker lubricating oil pump is a part of the fire pump diesel engine assembly, which is an active component not subject to aging management review.
- Floor drains and curbs for fire-fighting water – Floor drains for fire-fighting water are addressed in LRA section 2.3.3.18 (Plant Drains) and tables 2.3.3-18-IP2 and 2.3.3-18-IP3 under component type “piping” with the aging management review results in LRA tables 3.3.2-18-IP2 and 3.3.2-18-IP3. Curbs are included in the structural aging management review under component types “floor slabs, interior walls and ceilings” (for concrete). They are included in LRA table 2.4-3 with the aging management review results in LRA table 3.5.2-3.
- Backflow prevention devices – Backflow prevention devices are addressed in LRA section 2.3.3.18 and tables 2.3.3-18-IP2 and 2.3.3-18-IP3 under the component type “valve body” with the aging management review results in LRA tables 3.3.2-11-IP2 and 3.3.2-11-IP3.
- Flame retardant coating for cables – Flame retardant coatings for cables are subject to aging management review and are included in the category of bulk commodities evaluated in the structural aging management review. Flame retardant coatings are a subcomponent of component types “fire barrier penetration seal” and “fire stop”. These component types are included in LRA table 2.4-4 with the aging management review results in LRA table 3.5.2-4.
- Fire retardant coating for structural steel supporting walls and ceilings – Fire retardant coating for structural steel supporting walls and ceilings are subject to aging management review and are included in the structural aging management review as component type “fire proofing”. This line item is included in LRA table 2.4-4 with the aging management review results in LRA table 3.5.2-4.

RAI 2.3B.3.11-1

The following LRA drawings show fire protection system components as not within the scope of license renewal:

LRA drawing LRA-9321-40903-0 shows the following fire protection system components as not within the scope of license renewal (i.e., not highlighted in green):

- FP-T-4 Pneumatic Tank and Components

LRA drawing LRA-9321-40913-001-0 shows the following fire protection system components as not within the scope of license renewal (i.e., not highlighted in green):

- Turbine Generator Building Foam System
- Turbine Building Wall Spray System No. 3
- Yard Transformer Separation
- Main Transformer No. 31
- Main Transformer No. 32
- Unit Auxiliary Transformer
- Station Auxiliary Transformer
- North Half Sprinkler No. 6
- Boiler Room Sprinkler System
- Sprinkler System for Auxiliary Feed Water Pump Room
- Lube Oil Storage Tank
- Lube Oil Reservoir
- Manual/Spray System No. 2, Boiler Feed Pump
- H2 Seal Oil Unit
- Manual Boiler Feed Pump Oil Accumulators No. 31 and 32
- Boiler Feed Console Pump

The staff requests that the applicant verify whether the above components are within the scope of license renewal in accordance with 10 CFR 54.4(a) and subject to an AMR in accordance with 10 CFR 54.21(a)(1). If these components are excluded from the scope of license renewal and are not subject to an AMR, the staff requests that the applicant provide justification for the exclusion.

Response for RAI 2.3B.3.11-1

The following scoping and screening results are applicable to fire protection system components.

LRA drawing LRA-9321-40903-0

- FP-T-4 Pneumatic Tank and Components

FP-T-4 pneumatic tank and components are not required for 10 CFR 50.48 and are not described in fire protection SERs for the response to BTP 9.5-1. The pneumatic tank and components were used in the past to aid the two jockey pumps in maintaining fire loop pressure. They are no longer used and are isolated from the rest of the system by normally closed valve FP-84. Jockey pumps FP-P-5 & 6 maintain sufficient pressure on the fire protection piping system during non-fire conditions to prevent unnecessary starting of the main fire pumps.

LRA drawing LRA-9321-40913-001-0

- Turbine Generator Building Foam Systems

Fluid-containing portions of the turbine generator building foam systems are included with miscellaneous systems in scope for 10 CFR 54.4(a)(2) and are subject to aging management review. The aging management review results for the fluid-containing portions of the systems are in table 3.3.2-19-20-IP3. Based on discussion in the IP3 SER dated March 6, 1979, the foam suppression systems for various areas in the turbine building are considered to meet the scoping criterion of 10 CFR 54.4(a)(3), in addition to 10 CFR 54.4(a)(2). The aging management review results in table 3.3.2-11-IP3 are applicable to the portions of the turbine generator building foam systems normally containing air.

- Turbine Building Wall Spray System No. 3

The turbine building wall spray system No. 3 is in scope as shown on drawing LRA-9321-40913 -001-0 coordinates (D, 5). The absence of boundary flags where highlighted piping enters a text box indicates that the portion of the system described in the text box is in scope and subject to aging management review.

- Yard Transformer Separation

The yard transformer separation spray system is in scope as shown on drawing LRA-9321-40913 -001-0 coordinate (D, 5). The absence of boundary flags where highlighted piping enters a text box indicates that the portion of the system described in the text box is in scope and subject to aging management review

- Main Transformer No. 31

The deluge system and associated components for main transformer No. 31 adjacent to the control building were initially determined to have no license renewal intended function. They were considered required only to protect the transformer to satisfy requirements of the plant insurance carrier. However, the spray systems provide for defense in depth in addition to installed 3 hour rated fire barriers between the transformer and the turbine building and are now considered in scope and subject to aging management review for license renewal. Applicable component types that are subject to aging management review are included in LRA table 2.3.3-11-IP3 with the aging management review results in LRA table 3.3.2-11-IP3.

- Main Transformer No. 32

The deluge system and associated components for main transformer No. 32 adjacent to the control building were initially determined to have no license renewal intended function. They were considered required only to protect the transformer to satisfy requirements of the plant insurance carrier. However, the spray systems provide for defense in depth in addition to installed 3 hour rated fire barriers between the transformer and the turbine building and are now considered in scope and subject to aging management review for license renewal. Applicable component types that are subject to aging management review are included in LRA table 2.3.3-11-IP3 with the aging management review results in LRA table 3.3.2-11-IP3.

- Unit Auxiliary Transformer

The deluge system and associated components for the unit auxiliary transformer adjacent to the control building were initially determined to have no license renewal intended function. They were considered required only to protect the transformer to satisfy requirements of the plant insurance carrier. However, the spray systems provide for defense in depth in addition to installed 3 hour rated fire barriers between the transformer and the turbine building and are now considered in scope and subject to aging management review for license renewal. Applicable component types that are subject to aging management review are included in LRA table 2.3.3-11-IP3 with the aging management review results in LRA table 3.3.2-11-IP3.

- Station Auxiliary Transformer

The deluge system and associated components for the station auxiliary transformer adjacent to the control building were initially determined to have no license renewal intended function. They were considered required only to protect the transformer to satisfy requirements of the plant insurance carrier. However, the spray systems provide for defense in depth in addition to installed 3 hour rated fire barriers between the transformer and the turbine building and are now considered in scope and subject to aging management review for license renewal. Applicable component types that are subject to aging management review are included in LRA table 2.3.3-11-IP3 with the aging management review results in LRA table 3.3.2-11-IP3.

- North Half Sprinkler No. 6

Turbine building north half sprinkler No. 6 system was initially determined to have no license renewal intended function since a fire in the area protected by the system cannot disable the credited safe-shutdown equipment, which is located outside the area. However, based on discussion in the IP3 SER dated March 6, 1979, the turbine building north half sprinkler No. 6 system provides defense in depth in addition to hose stations throughout the turbine building and fire barriers between the turbine building and control building. The system is therefore considered in the scope of license renewal and subject to aging management review in accordance with the criterion of 10 CFR 54.4(a)(3). The aging management review results in table 3.3.2-11-IP3 are applicable to the turbine building north half sprinkler No. 6 system.

- Boiler Room Sprinkler System

The boiler room sprinkler system is not required to satisfy the provisions of Appendix A to BTP 9.5-1 and is not credited in fire protection SERs. The boiler room sprinkler system is maintained to satisfy requirements of the plant insurance carrier. The boiler room sprinkler system does not protect safety-related equipment and is not located near any building housing safety-related equipment. Fire in the area of the boiler room will be contained to that area and not affect safe shutdown equipment due to its location and limited amount of combustibles.

- Sprinkler System for Auxiliary Feed Water Pump Room

The sprinkler system for auxiliary feed water pump room is in scope as shown on drawing

LRA-9321-40913-001-0 coordinates (E, 8). The absence of boundary flags where the highlighted piping enters the text box indicates that the portion of the system described in the text box is in scope and subject to aging management review.

- Lube Oil Storage Tank

Fluid-containing portions of the lube oil storage tank foam suppression systems are included with miscellaneous systems in scope for 10 CFR 54.4(a)(2) and are subject to aging management review. The aging management review results for the fluid-containing portions of the system are in table 3.3.2-19-20-IP3. Based on discussion in the IP3 SER dated March 6, 1979, the lube oil storage tank foam suppression system is considered to meet the scoping criterion of 10 CFR 54.4(a)(3), in addition to 10 CFR 54.4(a)(2). The aging management review results in table 3.3.2-11-IP3 are applicable to the portions of the lube oil storage tank foam suppression system normally containing air.

- Lube Oil Reservoir

Fluid-containing portions of the lube oil reservoir foam suppression systems are included with miscellaneous systems in scope for 10 CFR 54.4(a)(2) and are subject to aging management review. The aging management review results for the fluid-containing portions of the system are in table 3.3.2-19-20-IP3. Based on discussion in the IP3 SER dated March 6, 1979, the lube oil reservoir foam suppression system is considered to meet the scoping criterion of 10 CFR 54.4(a)(3), in addition to 10 CFR 54.4(a)(2). The aging management review results in table 3.3.2-11-IP3 are applicable to the portions of the lube oil reservoir foam suppression system normally containing air.

- Manual/Spray System No. 2, Boiler Feed Pump

The manual/spray system No. 2, boiler feed pump is not required to satisfy the provisions of Appendix A to BTP 9.5-1 and is not credited in fire protection SERs. The manual spray system No. 2 is to satisfy requirements of the plant insurance carrier. Section 5.9.1 of the SER states there is no safety-related equipment or electrical cables located within the turbine building. Section 5.9.6 of the SER discusses modifications providing three-hour fire-rated doors and dampers in the barriers between the turbine building and the control building as well as upgrading penetrations to a three-hour fire-rating.

- H2 Seal Oil Unit

Fluid-containing portions of the H2 seal oil unit foam suppression systems are included with miscellaneous systems in scope for 10 CFR 54.4(a)(2) and are subject to aging management review. The aging management review results for the fluid-containing portions of the system are in table 3.3.2-19-20-IP3. Based on discussion in the IP3 SER dated March 6, 1979, the H2 seal oil unit foam suppression system is considered to meet the scoping criterion of 10 CFR 54.4(a)(3), in addition to 10 CFR 54.4(a)(2). The aging management review results in table 3.3.2-11-IP3 are applicable to the portions of the H2 seal oil unit foam suppression system normally containing air.

- Manual Boiler Feed Pump Oil Accumulators No. 31 and 32

Fluid-containing portions of the manual boiler feed pump oil accumulators No. 31 and 32 foam suppression systems are included with miscellaneous systems in scope for 10 CFR

54.4(a)(2) and are subject to aging management review. The aging management review results for the fluid-containing portions of the system are in table 3.3.2-19-20-IP3. Based on discussion in the IP3 SER dated March 6, 1979, the manual boiler feed pump oil accumulators No. 31 and 32 foam suppression system is considered to meet the scoping criterion of 10 CFR 54.4(a)(3), in addition to 10 CFR 54.4(a)(2). The aging management review results in table 3.3.2-11-IP3 are applicable to the portions of the manual boiler feed pump oil accumulators No. 31 and 32 foam suppression system normally containing air.

- **Boiler Feed Console Pump**

Fluid-containing portions of the boiler feed console pump foam suppression systems are included with miscellaneous systems in scope for 10 CFR 54.4(a)(2) and are subject to aging management review. The aging management review results for the fluid-containing portions of the system are in table 3.3.2-19-20-IP3. Based on discussion in the IP3 SER dated March 6, 1979, the boiler feed console pump foam suppression system is considered to meet the scoping criterion of 10 CFR 54.4(a)(3), in addition to 10 CFR 54.4(a)(2). The aging management review results in table 3.3.2-11-IP3 are applicable to the portions of the boiler feed console pump foam suppression system normally containing air.

RAI 2.3B.3.11-2

Section 3.1.8 of the IP3 SER dated March 6, 1979, discusses dry-pipe pre-action sprinkler systems for all cable trays in the electrical tunnels, electrical penetration areas, and cable trays in the motor control center areas. The dry-pipe pre-action sprinkler systems do not appear in LRA Section 2.3.3.11 as being within the scope of the license renewal and subject to an AMR. The staff requests that the applicant verify whether the dry-pipe pre-action sprinkler systems for all cable trays in the electrical tunnels, electrical penetration areas, and cable trays in the motor control center areas are within the scope of license renewal in accordance with 10 CFR 54.4(a) and subject to an AMR in accordance with 10 CFR 54.21(a)(1). If they are excluded from the scope of license renewal and are not subject to an AMR, the staff requests that the applicant provide justification for the exclusion.

Response for RAI 2.3B.3.11-2

The dry-pipe pre-action sprinkler systems for all cable trays in the electrical tunnels, electrical penetration areas, and cable trays in the motor control center areas are within the scope of license renewal and subject to aging management review. The electrical tunnel dry pipe pre-action sprinkler systems 8, 8A, 9, and 9A are shown on drawing LRA-9321-40913-001-0 at coordinates G-6. The electrical tunnel sprinkler systems cover areas in the electrical penetration area and cable trays in the motor control center areas, in addition to the cable trays in the electrical tunnels. The absence of boundary flags where the highlighted piping enters the text box indicates that the portion of the system described in the text box is in scope and subject to aging management review.

RAI 2.3B.3.11-3

Section 5.9.1 of the IP3 SER dated March 6, 1979, discusses automatic deluge foam suppression systems for various areas in turbine building. The foam suppression systems do not appear in LRA Section 2.3.3.11 as being within the scope of the license renewal and subject to an AMR. The staff requests that the applicant verify whether the foam suppression systems for various areas in the turbine building are within the scope of license renewal in accordance

with 10 CFR 54.4(a) and subject to an AMR in accordance with 10 CFR 54.21(a)(1). If the systems are excluded from the scope of license renewal and is not subject to an AMR, the staff requests that the applicant provide justification for the exclusion.

Response for RAI 2.3B.3.11-3

Fluid-containing portions of the foam suppression systems for various areas in the turbine building are included with miscellaneous systems in scope for 10 CFR 54.4(a)(2) and are subject to aging management review. The aging management review results for the fluid-containing portions of the systems are in table 3.3.2-19-20-IP3. Based on discussion in the IP3 SER dated March 6, 1979, the foam suppression systems for various areas in the turbine building are considered to meet the scoping criterion of 10 CFR 54.4(a)(3), in addition to 10 CFR 54.4(a)(2). The aging management review results in table 3.3.2-11-IP3 are applicable to the portions of the foam suppression systems normally containing air.

RAI 2.3B.3.11-4

Section 5.11.1 of the IP3 SER dated March 6, 1979, discusses wet pipe automatic sprinklers in the diesel generator building sump area beneath each diesel engine and on the diesel day tank. On license renewal drawing LRA-9321-40913-0 at location E3, the wet pipe automatic sprinkler system does not appear to be within the scope of the license renewal and subject to an AMR, i.e., the box surrounding the sprinklers in question are not highlighted. The staff requests that the applicant verify whether the wet pipe sprinkler system to protect the diesel generator building sump area and diesel day tank is within the scope of license renewal in accordance with 10 CFR 54.4(a) and subject to an AMR in accordance with 10 CFR 54.21(a)(1). If the system is excluded from the scope of license renewal and is not subject to an AMR, the staff requests that the applicant provide justification for the exclusion.

Response for RAI 2.3B.3.11-4

IP3 wet pipe automatic sprinklers in the diesel generator building sump area beneath each diesel engine and on the diesel day tanks are in scope and subject to aging management review as shown on drawing LRA-9321-40913-001-0, coordinates (E, 3). The absence of boundary flags where the highlighted piping enters the text box indicates that the portion of the system described in the text box is in scope and subject to aging management review along with the highlighted components on the drawing.

RAI 2.3B.3.11-5

Section 5.13.1 of the IP3 SER dated March 6, 1979, discusses the charcoal filter manual water spray system. The manual water spray system and its associated components do not appear in LRA Section 2.3.3.11 as being within the scope of the license renewal and subject to an AMR. The staff requests that the applicant verify whether the charcoal filter manual water spray system and its associated components are within the scope of license renewal in accordance with 10 CFR 54.4(a) and subject to an AMR in accordance with 10 CFR 54.21(a)(1). If the system is excluded from the scope of license renewal and is not subject to an AMR, the staff requests that the applicant provide justification for the exclusion.

Response for RAI 2.3B.3.11-5

IP3 charcoal filter manual water spray system is in scope as shown on LRA-9321-40913-001-0, coordinates (H, 8). The absence of boundary flags where the highlighted piping enters the text box indicates that the portion of the system described in the text box is in scope and subject to aging management review along with the highlighted components on the drawing. The continuation from LRA-9321-40913-001-0 is to an equipment arrangement drawing which is not available as an LRA drawing.

RAI 2.3B.3.11-6

Section 5.15.1 of the IP3 SER dated March 6, 1979, discusses automatic water spray systems for oil-filled transformers located adjacent to the control building. The automatic water spray systems and their associated components do not appear in LRA Section 2.3.3.11 as being in the scope of the license renewal and subject to an AMR. The staff requests that the applicant verify whether the automatic water spray systems for oil-filled transformers are in the scope of license renewal in accordance with 10 CFR 54.4(a) and subject to an AMR in accordance with 10 CFR 54.21(a)(1). If the systems are excluded from the scope of license renewal and are not subject to an AMR, the staff requests that the applicant provide justification for the exclusion.

Response for RAI 2.3B.3.11-6

The automatic water spray systems and their associated components for the oil filled transformers located adjacent to the control building were initially determined to have no license renewal intended function. They were considered required only to protect the transformers to satisfy requirements of the plant insurance carrier. However, the spray systems provide for defense in depth in addition to installed 3 hour rated fire barriers between the control building and the transformer yard and are now considered in scope and subject to aging management review for license renewal. Applicable component types that are subject to aging management review are included in LRA table 2.3.3-11-IP3 with the aging management review results in LRA table 3.3.2-11-IP3.

RAI 2.3A.3.12-1

LRA Tables 2.3.3-12-IP2 and 2.3.3-12-IP3 exclude several types of CO2 and Halon 1301 fire suppression system components that are discussed in the SERs and/or UFSAR, and which also appear in the LRA drawings as within the scope of license renewal (i.e., highlighted in brown). These components are listed below:

- strainer housings
- pipe fittings
- pipe supports
- couplings • odorizer
- threaded connections
- flexible hose
- latch door pull box
- pneumatic actuators

For each component type, determine whether the component should be included in LRA Tables 2.3.3-12-IP2 and 2.3.3-12-IP3 as component types subject to an AMR, and if not, justify the exclusion.

Response for RAI 2.3A.3.12-1

Each of the listed components types is addressed as follows.

Strainer housings – Based on a review of LRA drawings D-8775-002-0, D-8775-004-0, D-8775-005-0 and 9321-24403-0, there are no strainer housings in the CO2 or Halon systems.

Pipe fittings – As stated in LRA section 2.0 page 2.0-1, the term “piping” in component lists may include pipe, pipe fittings (such as elbows and reducers), flow elements, orifices, and thermowells. Pipe fittings are subject to aging management review and included in LRA tables 2.3.3-12-IP2 and 2.3.3-12-IP3 with aging management review results in tables 3.3.2-12-IP2 and 3.3.2-12-IP3 under the component type “piping”.

Pipe supports – Pipe supports are subject to aging management review and are included in the structural aging management review as shown in LRA table 2.4-4 under "component and piping supports”.

Couplings – As stated in LRA section 2.0, page 2.0-1, the term “piping” in component lists may include pipe, pipe fittings (such as elbows and reducers), flow elements, orifices, and thermowells. Couplings are considered to be pipe fittings, are subject to aging management review and included in the “piping” line item in LRA tables 2.3.3-12-IP2 and 2.3.3-12-IP3 with aging management review results in tables 3.3.2-12-IP2 and 3.3.2-12-IP3.

Odorizer – As stated in LRA section 2.0, page 2.0-1, the term “piping” in component lists may include pipe, pipe fittings (such as elbows and reducers), flow elements, orifices, and thermowells. Odorizer housings are subject to aging management review and are included in component type “piping” in LRA tables 2.3.3-12-IP2 and 2.3.3-12-IP3 with aging management review results in tables 3.3.2-12-IP2 and 3.3.2-12-IP3. The internals of the odorizer are active subcomponents not subject to aging management review.

Threaded connections – As stated in LRA section 2.0 page 2.0-1, the term “piping” in component lists may include pipe, pipe fittings (such as elbows and reducers), flow elements, orifices, and thermowells. Threaded connections are pipe fittings subject to aging management review and included in the “piping” line item in LRA tables 2.3.3-12-IP2 and 2.3.3-12-IP3 with aging management review results in tables 3.3.2-12-IP2 and 3.3.2-12-IP3.

Flexible hose – There are no flexible hoses utilized in the in-scope CO2 or Halon systems. LRA drawing D-8775-005-0 is based on a vendor drawing that indicates flex hoses at the gas cylinders. Flexible hoses are not used in the IPEC configuration. Flexible hoses are utilized in the RCP oil collection system for IP2 and IP3 as indicated in tables 2.3.3-12-IP2 and 2.3.3-12-IP3 with aging management review results in tables 3.3.2-12-IP2 and 3.3.2-12-IP3. These hoses are stainless steel hoses that are not replaced on a specified frequency.

Latch door pull box - Latch door pull boxes are active electro-mechanical devices not subject to aging management review.

Pneumatic actuators – Pneumatic actuators (in the form of gas operated pilot valves) are utilized in the in-scope CO2 and Halon systems. Actuation is by means of active electrical devices which actuate pilot valves utilizing gas pressure as the motive force. The pilot valves and process valves are included under the component type “valve body” and are subject to aging management review.

RAI 2.3B.3.12-1

LRA drawing LRA-9321-24403-0 shows following fire protection system components as not within the scope of license renewal (i.e., not highlighted in brown):

- Appendix R Diesel Generator Halon 1301 System
- TSC/Plant Computer Halon System
- Record Room Vault Halon 1301 System for Unit 3

The staff requests that the applicant verify whether the above components are within the scope of license renewal in accordance with 10 CFR 54.4(a) and subject to an AMR in accordance with 10 CFR 54.21(a)(1). If these components are excluded from the scope of license renewal and are not subject to an AMR, the staff requests that the applicant provide justification for the exclusion.

Response for RAI 2.3B.3.12-1

Each system is addressed individually as follows.

Appendix R diesel generator Halon 1301 system

The Appendix R diesel generator is contained in a stand-alone structure separated from other plant structures and equipment.

TSC/plant computer Halon 1301 system

The TSC/plant computer is in an administration building attached to the turbine building.

Record room vault Halon 1301 system for IP3

The record room vault Halon 1301 system for IP3 has been replaced with a sprinkler system. The record room vault is located in an administration building attached to the turbine building.

These areas do not contain systems or components required for safe shutdown of the plant, do not provide an exposure hazard to any building or area required for safe shutdown, and are not in safety-related areas. The applicable IP3 fire protection SER, dated March 6, 1979, credits no fire suppression systems for these areas. The Halon systems are not required to demonstrate compliance with 10 CFR 50.48. The fire protection SER does not stipulate the addition of suppression systems for the Appendix R diesel generator, TSC/plant computer, or the record room vault for IP3.

RAI 2.5-1

General Design Criterion 17 of 10 CFR Part 50, Appendix A, requires that electric power from the transmission network to the onsite electric distribution system be supplied by two physically independent circuits to minimize the likelihood of their simultaneous failure. In addition, the guidance provided by letter dated April 1, 2002, "Staff Guidance on Scoping of Equipment Relied on to Meet the Requirements of the Station Blackout (SBO) Rule (10 CFR 50.63) for License Renewal (10 CFR 54.4(a)(3))," states:

For purposes of the license renewal rule, the staff has determined that the plant system portion of the offsite power system that is used to connect the plant to the offsite power source should be included within the scope of the rule. This path typically includes switchyard circuit breakers that connect to the offsite system power transformers (startup transformers), the transformers themselves, the intervening overhead or underground circuits between circuit breaker and transformer and transformer and onsite electrical system, and the associated control circuits and structures. Ensuring that the appropriate offsite power system long-lived passive structures and components that are part of this circuit path are subject to an AMR will assure that the bases underlying the SBO requirements are maintained over the period of extended license.

According to the above, both paths from the safety-related 480 Volt (V) buses to the first circuit breaker from the offsite line, used to control the offsite circuits to the plant, should be age managed. The guidance does not specify that the switchyard is not part of the plant system nor that the switchyard does not need to be included in the scope of license renewal. Explain in detail which high voltage breakers and other components in the switchyard will be connected from the startup transformers up to the offsite power system for the purpose of SBO recovery.

Response for RAI 2.5-1

The staff position in the letter dated April 1, 2002, "Staff Guidance on Scoping of Equipment Relied on to Meet the Requirements of the Station Blackout (SBO) Rule (10 CFR 50.63) for License Renewal (10 CFR 54.4(a)(3))" is that the plant system portion of the offsite power system should be included within the scope of license renewal. Specifically, the letter states,

"For purposes of the license renewal rule, the staff has determined that the plant system portion of the offsite power system that is used to connect the plant to the offsite power source should be included within the scope of the rule."

Implementation of the staff position requires definition of the offsite power source. The April 1, 2002 letter states:

"The offsite power systems of U.S. nuclear power plants consist of a transmission system (grid) component that provides a source of power and a plant system component that connects that power source to a plant's onsite electrical distribution system which powers safety equipment. The staff has historically relied upon the well-distributed, redundant, and interconnected nature of the grid to provide the necessary level of reliability to support nuclear power plant operations."

In this discussion, the staff defines the offsite power source as the transmission system or the

grid. The staff refers to the well-distributed, redundant, and interconnected nature of the grid. The Buchanan substation, which includes the 345 kV, the 138 kV, and the 13.8 kV sections, is a key element of the well-distributed, redundant and interconnected grid or transmission system that constitutes the offsite power source for IP2 and IP3. The Buchanan substation provides for the interconnection of multiple sources of power and provides dispatch control for a multiple county transmission network. The multiple power sources are interconnected through switchyard bus, transmission conductors, and breakers within the substation. In keeping with the guidance in the letter dated April 1, 2002, the SBO recovery paths from the plant systems to the offsite power system or grid connection are included in scope for license renewal.

General Design Criterion 17 of 10 CFR Part 50, Appendix A, specifies that electric power from the transmission network to the onsite electric distribution system be supplied by two physically independent circuits to minimize the likelihood of their simultaneous failure. As discussed in IP2 UFSAR Section 8.1.2.1, "10 CFR 50 Appendix A General Design Criterion 17 - Electric Power Systems," the two physically independent circuits supplying offsite power to IP2 are the Buchanan Substation via the Con Edison 138 kV system feeder and the Buchanan 13.8 kV system feeder. The 138 kV system feeder is the primary offsite power source connected to the 6.9 kV buses through the station auxiliary transformer. The 13.8 kV system feeder is the secondary offsite power source connected to the 6.9 kV buses through the GT autotransformer. The station auxiliary transformer and the GT autotransformer perform the functions assigned to the typical startup transformers referred to in the April 1, 2002 letter.

LRA Figure 2.5-2 showed only the primary offsite power source or the 6.9kV source from the 138kV/6.9kV station auxiliary transformer, which is connected to the Buchanan substation through the Con Edison 138kV feeder. Figure 2.5-2 is revised as shown in this response to add the secondary offsite power feeder from the 13.8 kV Buchanan substation via the GT autotransformer.

As shown in the revised LRA Figure 2.5-2, the 6.9 kV buses receive power from the two independent sources of offsite power via the 138 kV / 6.9 kV station auxiliary transformer or the 13.8 kV / 6.9 kV GT autotransformer. The station auxiliary transformer is connected to the 138 kV Buchanan substation, the primary offsite power source, via switchyard bus, overhead transmission conductors, and underground transmission conductors through motor-operated disconnect F3A, which is located at the Buchanan substation. The GT autotransformer is connected to the 13.8 kV Buchanan substation, the secondary offsite power source, via underground medium voltage cable through breaker F2-3, which is located at the Buchanan substation.

General Design Criterion 17 of 10 CFR Part 50, Appendix A, specifies that electric power from the transmission network to the onsite electric distribution system be supplied by two physically independent circuits to minimize the likelihood of their simultaneous failure. As discussed in IP3 UFSAR Section 8.2.1, "Network Interconnection", and 8.2.3, "Emergency Power - Sources Description," the two physically independent circuits supplying offsite power to IP3 are the Buchanan Substation via the Con Edison 138 kV system feeder and the Buchanan 13.8 kV system feeder. The 138 kV system feeder is the primary offsite power source connected to the 6.9 kV buses through the station auxiliary transformer. The 13.8 kV system feeder is the secondary offsite power source connected to the 6.9 kV buses through the GT autotransformer. The station auxiliary transformer and the GT autotransformer perform the functions assigned to the typical startup transformers referred to in the April 1, 2002 letter.

LRA Figure 2.5-3 showed only the primary offsite power source or the 6.9kV source from the

138kV/6.9kV station auxiliary transformer, which is connected to the Buchanan substation through the Con Edison 138kV feeder.. Figure 2.5-3 is revised as shown in this response to add the secondary offsite power feeder from the 13.8 kV Buchanan substation via the GT autotransformer.

As shown in the revised LRA Figure 2.5-3, the 6.9 kV buses receive power from the two independent sources of offsite power via the 138 kV / 6.9 kV station auxiliary transformer or the 13.8 kV / 6.9 kV GT autotransformer. The station auxiliary transformer is connected to the 138 kV Buchanan substation, the primary offsite power source, via switchyard bus and overhead transmission conductors through breaker BT2-6, which is located at the Buchanan substation. The GT autotransformer is connected to the 13.8 kV Buchanan substation, the secondary offsite power source, via underground medium voltage cable through breaker F3-1, which is located at the Buchanan substation.

The Indian Point plant system portion of the offsite power system used for SBO offsite power recovery is included within the scope of license renewal. This includes the plant portion of both GDC-17 offsite power sources. The Indian Point scoping for SBO recovery is consistent with guidance in the April 1, 2002 letter, "NRC Staff Position on the License Renewal Rule (10 CFR 54.4) as it relates to The Station Blackout Rule (10 CFR 50.63)."

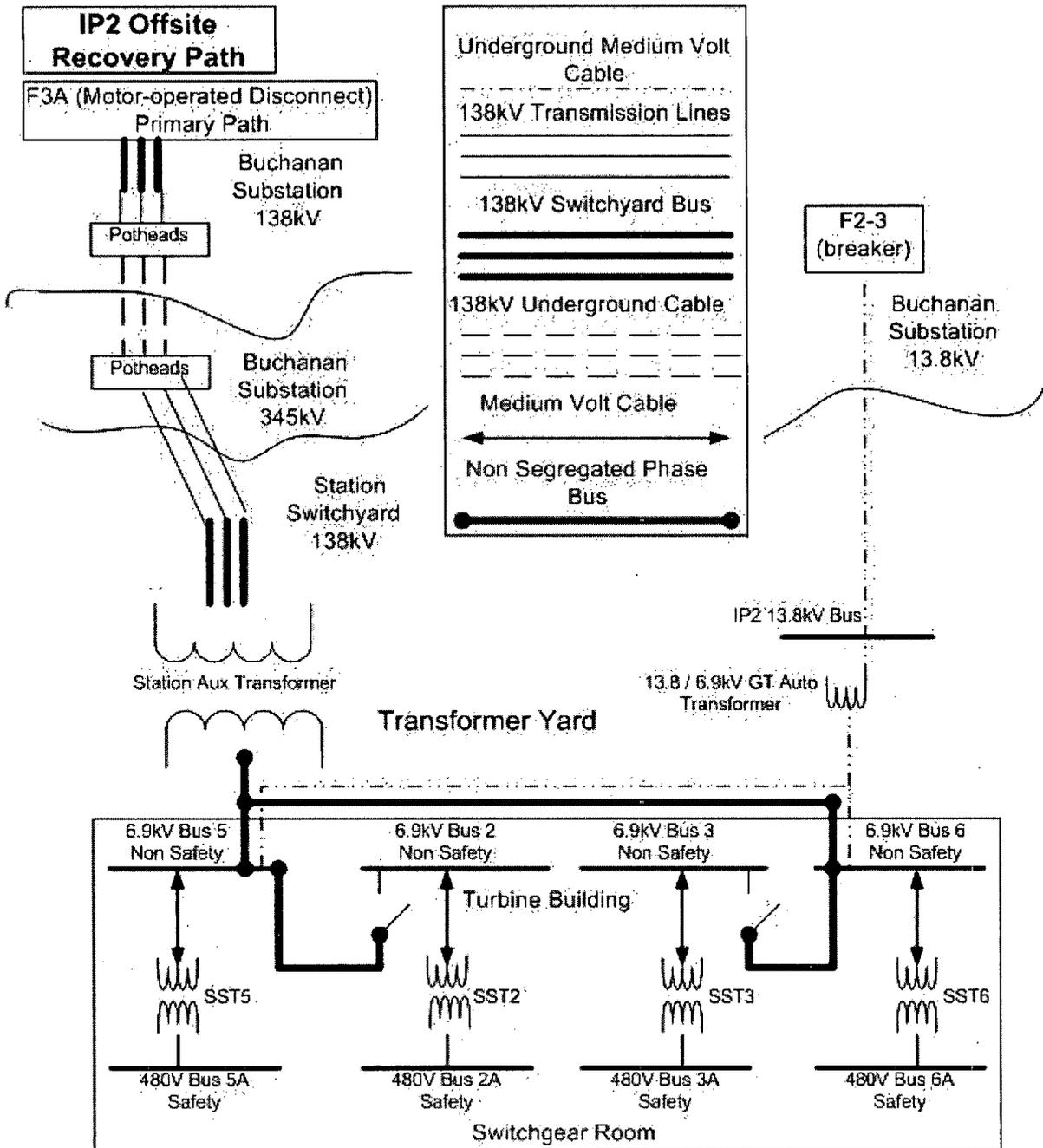
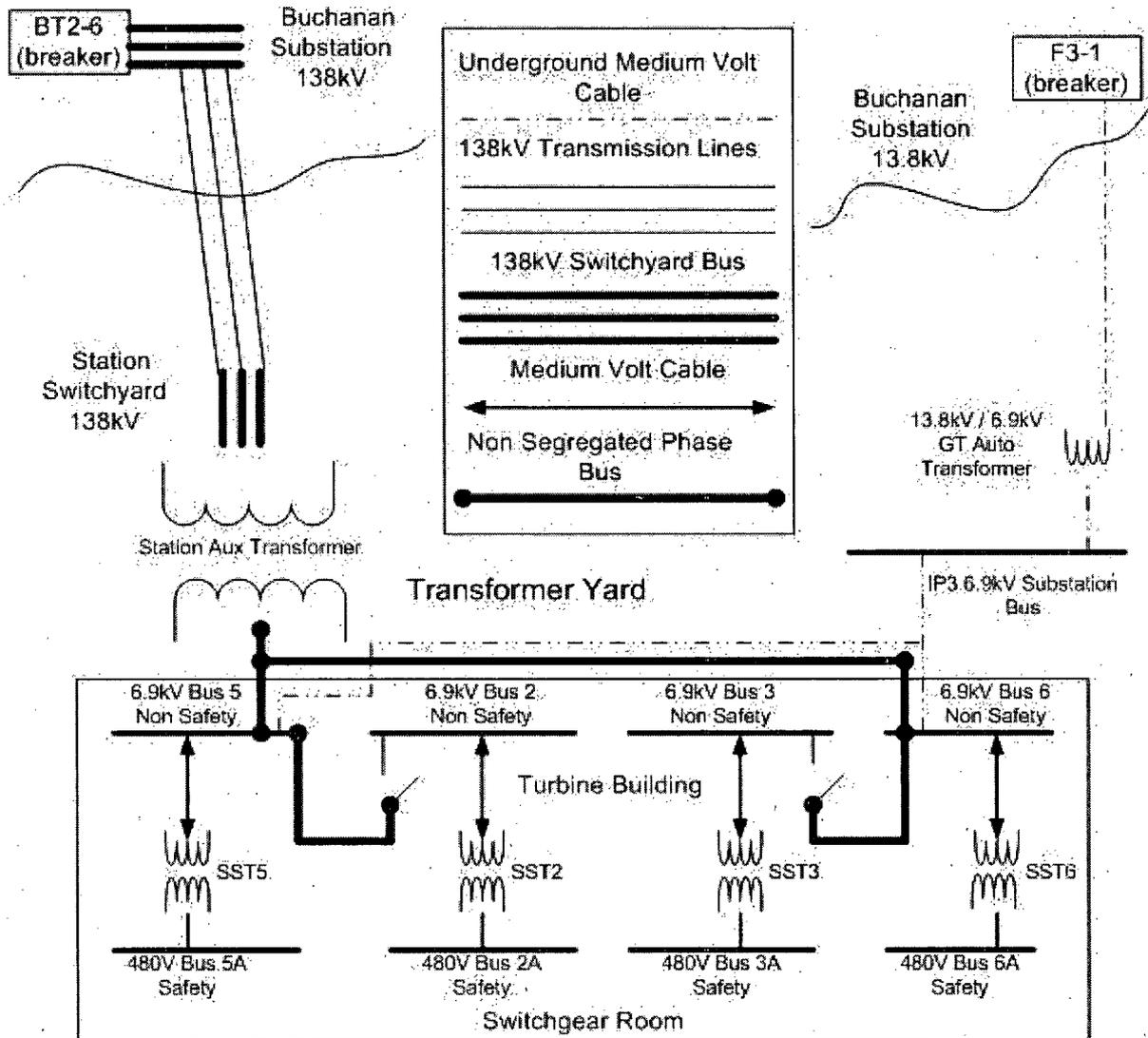


Figure 2.5-2
IP2 Offsite Power Scoping Diagram

**IP3 Offsite
 Recovery Path**



**Figure 2.5-3
 IP3 Offsite Power Scoping Diagram**

RAI 2.5-2

Nuclear Energy Institute (NEI) 95-10, "Industry Guideline for Implementing the Requirements of 10 CFR Part 54 -The License Renewal Rule," Appendix B indicates that elements, resistance temperature detectors (RTDs), sensors, thermocouples and transducers should be included in the list of components/commodity groups subject to an AMR if a pressure boundary is applicable. Explain why these components are not included in Section 2.5 of the LRA.

Response for RAI 2.5-2

As stated in IPEC LRA, Section 2.0, Page 2.0-1, "The term "piping" in component lists may include pipe, pipe fittings (such as elbows and reducers), flow elements, orifices, and thermowells. If such components have unique tag numbers or the specific component has a function other than pressure boundary, then flow elements, orifices and thermowells are identified as a separate component type."

As stated in the IPEC LRA, Section 2.1.2.3.1, Page 2.1-18, "The pressure boundary function that may be associated with some electrical and I&C components identified in NEI 95-10 Appendix B (e.g., flow elements, vibration probes) was considered in the mechanical aging management reviews, as applicable. Structural commodities that support electrical components (e.g., cable trays, conduit and cable trenches) are included in the structural aging management reviews."

Section 2.5 of the LRA, "Scoping And Screening Results: Electrical And Instrumentation And Control Systems," contains the results of the electrical and I&C scoping and screening process. The mechanical section of the LRA contains the results of the mechanical scoping and screening process. The pressure boundary function is included in the mechanical sections if a pressure boundary is applicable for elements, resistance temperature detectors (RTDs), sensors, thermocouples or transducers. Examples are flow elements and thermowells.

RAI 2.5-3

NEI 95-10, Appendix B indicates that electrical splices, terminal blocks, control cables and isolated-phase bus should be included in the commodity group of "cables & connections, bus, electrical portions of electrical and I&C penetration assemblies." Explain why these components are not included in Section 2.5 of the LR.

Response for RAI 2.5-3

As stated in the IPEC LRA, Section 2.5, Page 2.5-2, the commodity group "cables and connections, bus, electrical portions of electrical and I&C penetration assemblies, fuse holders outside of cabinets of active electrical SCs" is included in the scope of components subject to aging management review. This is identical to Item 77 of NEI 95-10, Appendix B. The items "electrical splices, terminal blocks, control cables and isolated-phase bus" are examples for the commodity group. Section 2.5 is for scoping and screening results, so the commodity groups listed are those subject to aging management review. Electrical splices, terminal blocks, and control cables are included in the commodity group "electrical cables and connections not subject to 10 CFR 50.49 EQ requirements." Isolated-phase bus is not included, because it does not perform an intended function.