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Document Control Desk
U.S. NUCLEAR REGULATORY COMMISSION
Mail Station P1-137
Washington, DC 20555

Gentlemen:

DOCKETS 50-266 AND 50-301
DESIGN SUMMARY FOR THE INSTALLATION OF
TWO ADDITIONAL EMERGENCY DIESEL GENERATORS
POINT BEACH NUCLEAR PLANTS, UNITS 1 AND 2

We are performing a modification that will install two additional emergency diesel generators and reconfigure portions of the 4160 Volt emergency electrical power system at our Point Beach Nuclear Plant. As requested by your staff, we are providing a design summary of this modification as an enclosure with this letter.

We have completed a safety evaluation in accordance with 10 CFR 50.59 for this change to the facility. The safety evaluation was reviewed and approved by the Point Beach Manager's Supervisory Staff in a meeting on September 7, 1993. The 10 CFR 50.59 safety evaluation concludes that this modification does not constitute an unreviewed safety question for Point Beach.

The enclosed design summary is being provided for your information and in support of the Technical Specification changes that will be required to support this modification for Point Beach Nuclear Plant, Units 1 and 2. We expect to submit a complete Technical Specification change request package in early 1994. An overview of the future Technical Specifications for Point Beach is provided as an attachment to this letter.

The first connection of the modification into the existing electrical system is expected to take place during the fall 1994 Unit 2 refueling outage presently scheduled to start on October 8, 1994.

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Amendments to the Point Beach Technical Specifications will be required to support the reconfiguration of the emergency electrical power distribution system at that time.

Please feel free to contact us if you have any questions.

Sincerely,



Bob Link
Vice President
Nuclear Power

CAC/jg

Enclosure

cc: NRC Regional Administrator, Region III
NRC Resident Inspector

**Diesel Generator Addition Project
Overview of Future Technical Specifications**

The new emergency diesel generator (EDG) configuration at PBNP will consist of four shared emergency diesel generators. Two Train A and two Train B EDGs will be normally available when this modification is complete. The two Train A diesels will normally be aligned as standby emergency power, one to the Unit 1 Train A 4160 volt bus (1A-05) and one to the Unit 2 Train A 4160 volt bus (2A-05). The two Train B EDGs will normally be aligned as standby emergency power, one to the Unit 1 Train B 4160 volt bus (1A-06) and one to the Unit 2 Train B 4160 volt bus (2A-06).

The two A train EDGs will be the existing EDGs G-01 and G-02. G-01 will automatically provide power to 1A-05 if power is lost on 1A-05, G-02 will automatically provide power to 2A-05 if power is lost on 2A-05. G-01 will be manually connectable to provide power to 2A-05, and G-02 will be manually connectable to provide power to 1A-05. Additionally, if G-01 is out of service, G-02 may be placed in a mode that will allow it to automatically load 1A-05 or 2A-05 or both, if either or both buses lose power. G-01 will have the same capability in the A train. The new EDGs G-03 and G-04 will have the same capabilities in the B train.

The primary reason for this configuration is to allow both units to continue operating without being in a Technical Specification Limiting Condition for Operation (LCO) for the situation of an EDG in one train or two EDGs, one in each train, being out of service. Two EDGs out of service in the same train will be the same situation as one diesel out of service in the current emergency electrical power system configuration, that is, a 7-day LCO would apply to both units. With a third diesel out of service, a 7-day LCO would apply to both units. With four diesels out of service, LCO 15.3.0, "General Consideration," hot shutdown within 3 hours would apply for both units.

The service water and auxiliary feedwater systems are shared between Point Beach Units 1 and 2. The service water and auxiliary feedwater pump motors are supplied by the following 480 Volt safeguards bus arrangement:

- 1B-03 powers electric Auxiliary Feedwater Pump P-38A and Service Water Pumps P-32A and P-32B.
- 1B-04 powers Service Water Pump P-32C.
- 2B-03 powers Service Water Pump P-32F
- 2B-04 powers electric Auxiliary Feedwater Pump P-38B and Service Water Pumps P-32D and P-32E.

The loss of normal power supply or standby emergency power supply for 1B-03 or 2B-04 results in a loss of redundancy for both units because of this shared equipment power supply arrangement. Therefore, the LCO for the loss of normal power supply or standby emergency power supply for either of these buses must apply to both units. The loss of normal power supply or standby emergency power supply for 1B-04 or 2B-03 does not result in an LCO for the unaffected unit, because sufficient redundancy remains (i.e. both electric auxiliary feedwater pumps and at least 2 service water pumps in each train).

The applicability of the LCO to one or both units should be determined by which bus has lost normal or standby emergency power capability. The normal power supplies to the 4160 Volt Safeguards Buses 1A-05, 1A-06, 2A-05, and 2A-06 are the 1A-03, 1A-04, 2A-03, and 2A-04 buses respectively. The emergency power supplies are the emergency diesel generators. The emergency diesel generators power the 4160 Volt Safeguards Buses 1A-05, 1A-06, 2A-05, and 2A-06 which in turn power the 480 Volt Safeguards Buses 1B-03, 1B-04, 2B-03, and 2B-04 respectively. Based on this approach, the safeguards power LCO statements would be:

1. For both units to be made critical, the normal power supply and standby emergency power supply to all the 4160 Volt safeguards buses shall be operable and the buses are energized from their normal supply.
2. For Unit 1 to be made critical, the normal power supply and standby emergency power supply to the 4160 Volt Safeguards Buses 1A-05, 1A-06, and 2A-06 shall be operable and the buses are energized from their normal supply.
3. For Unit 2 to be made critical, the normal power supply and standby emergency power supply to the 4160 Volt Safeguards Buses 2A-05, 2A-06, and 1A-05 shall be operable and the buses are energized from their normal supply.
4. The normal power supply or standby emergency power supply to 1A-05 or 2A-06 may be out of service for a period not exceeding 7 days provided an operable emergency diesel generator is supplying the bus for a loss of normal power supply. After 7 days, both units will be placed in hot shutdown within the following 6 hours.
5. The normal power supply or standby emergency power supply to 1A-06 or 2A-05 or both may be out of service for a period not exceeding 7 days provided an operable emergency diesel generator is supplying the bus for a loss of normal power supply. After 7 days, the affected unit or units will be placed in hot shutdown within the following 6 hours.

6. The normal power supply or standby emergency power supply to 1A-05 and 2A-05, or 1A-06 and 2A-06 may be out of service for a period not exceeding 7 days provided an operable emergency diesel generator is supplying the bus for a loss of normal power supply. After 7 days, both units will be placed in hot shutdown within the following 6 hours.

This approach is different than the current Technical Specification 15.3.7, "Auxiliary Electrical Systems," that states the emergency diesel generators are required to be operable. The approach presented here is the equivalent of specifying diesel operability and simplifies the way that the allowed system operational requirements are described. For example, the LCO statement for Statement 2 above, written using EDG operability would read as follows:

2. For Unit 1 to be made critical, the normal power supply to the 4160 Volt Safeguards Buses 1A-05, 1A-06, and 2A-06 shall be operable, the buses are energized from their normal supply, and Emergency Diesel Generator G-01 or G-02 is operable for 1A-05, G-03 or G-04 is operable for 1A-06, and G-03 or G-04 is operable for 2A-06.

Additionally, the Technical Specifications will be applicable for the interim configurations that will occur as the new emergency diesel generators are placed into service by using the more generic term "standby emergency power" rather than the individual EDG equipment identifications.

We do not expect to significantly change the surveillance Technical Specification 15.4.6 "Emergency Power System Periodic Tests."