



Consumers
Power

**POWERING
MICHIGAN'S PROGRESS**

Big Rock Point Nuclear Plant, 10269 US-31 North, Charlevoix, MI 49720

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February 18, 1993

Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

**DOCKET 50-155 - LICENSE DPR-6 - BIG ROCK POINT PLANT -
RESPONSE TO A NRC SAFETY EVALUATION CONCERNING CONSUMERS POWER COMPANY'S 120
DAY RESPONSE TO SUPPLEMENT 1 TO GENERIC LETTER 87-02**

On November 27, 1992, the Office of Nuclear Reactor Regulation issued its Safety Evaluation relative to Consumers Power Company's response for the Big Rock Point Plant to Supplement 1 to Generic Letter 87-02 (GL 87-02), Verification of Seismic Adequacy of Mechanical and Electrical Equipment in Operating Reactors, Unresolved Safety Issue (USI) A-46, dated September 21, 1992.

- I. The NRC Staff raised the concern regarding whether Consumers Power Company will fully implement all provisions of the guidance sections of the Generic Implementation Procedure (GIP) and, if not, what will be Consumers Power Company's process for notifying the Staff of deviations. With regard to this concern, Consumers Power Company's actions will be in accordance with Part I, Section 1.3 of the GIP, Rev 2 (Corrected February 14, 1992), herein referred to as GIP-2, which was accepted by the Staff in its SSER No 2 on the GIP, dated May 22, 1992.
- II. In regards to the descriptions of deviations from SQUG commitments in GIP-2, Sections 3.1.2 and 9.1, identified in Attachment A of the original response dated September 21, 1992, Consumers Power Company did indeed reference an incorrect version of GIP-2. For the purpose of this letter and the implementation of GIP-2, Consumers Power Company has verified that it is using the GIP-2 which the staff reviewed and accepted in SSER No 2.
- III. The Staff SER also took exception to the identified deviations as proposed. The following discussion reviews the Staff's concerns, the original deviations proposed in Attachment 2 of the original submittal, and the resolutions offered by Consumers Power Company for the Big Rock Point Plant.

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"The Licensee's proposed deviation from GIP-2, Section 3.1.2 involves the plant's inability to meet the single failure criterion because it has only one automatically-started emergency diesel generator. However, a standby diesel is available at the site which requires manual action to be placed into service within 24 hours. The Licensee should provide an alternate way of achieving safe shutdown by using a different path or different equipment in the same path. This equipment should be included in the seismic evaluation list of equipment needed to bring the plant to hot shutdown and maintain it in hot shutdown for 72 hours."

Licensee Response From September 21, 1992

A) Deviation to GIP-2, Section 3.1.2, Paragraph 3 states:

If achieving and maintaining safe shutdown is dependent on a single item of equipment whose failure to perform its active function, either due to seismic loads or random failure, would prevent accomplishment of any of the four essential safe shutdown functions, an alternative method to safe shutdown by use of a different path or a different item of equipment in the same path will be identified for seismic evaluation which is not dependent on that item of equipment.

At Big Rock Point the support system of emergency backup power does not meet this requirement. The specifics are that Big Rock Point only has one onsite Emergency Diesel Generator. A standby diesel generator is installed close to the plant and is wired to the plant system. It requires manual action to be placed into service which must be completed within 24 hours. This arrangement was required by NRC Memorandum and Order dated May 26, 1976.

The Standby Emergency Diesel Generator will not be included in the Seismic Verification Program.

Licensee Revised Response

Big Rock Point is not dependent on the emergency diesel generator (or any other source of on-site ac power) to achieve and maintain safe shutdown for up to 72 hours if a loss of offsite electric power system concurrent with turbine trip is experienced. The Staff has accepted this design characteristic as documented in their Supplemental Safety Evaluation related to 10 CFR 50.63 - Station Blackout Rule dated October 7, 1992. (This SSE was issued after Big Rock Point's Response to Supplement 1 to Generic Letter 87-02 on SQUG Resolution of USI A-46 dated September 21, 1992). Big Rock Point no longer proposes to deviate from GIP Rev 2, Section 3.1.2, Paragraph 3. The GIP-2 single failure criterion is expected to be met by verifying the seismic adequacy of the standby diesel generator. The standby diesel generator will be available within four hours under accident conditions.

Safe Shutdown Path - Design

The Big Rock Point Plant is a single unit direct-cycle boiling water reactor. Design output is 240 MWt/75MWe. Decay heat removal is accomplished using the main condenser, emergency condenser or the shutdown cooling system. The main condenser is generally used whenever condenser vacuum can be maintained with the steam jet air ejectors. The emergency condenser is used when the main condenser is unavailable and primary coolant system pressure is not low enough (less than 300 psig) to permit use of the shutdown cooling system.

The emergency condenser, similar to the isolation condenser at newer plants, has two internal sets of condensing tubes, each having the capability of removing 100% of the decay heat generated from the reactor following a SCRAM. The emergency condenser is located inside containment and is placed in operation either automatically (on loss of ac power, or when reactor pressure reaches 1435 psig, 100 psig above nominal operating pressure) or manually from the control room, or alternate shutdown building. After initiation, the emergency condenser can remove decay heat with no immediate operator action required (the operator has the ability to throttle the emergency condenser dc operated outlet valves to control the rate of cooldown). Following a reactor trip from full power, and with no makeup supply for shell side cooling water available, the emergency condenser can remove sufficient decay heat to prevent steam drum safety valve operation (1535 psi) for a period of four hours. Normally cooling water to the shell side of the emergency condenser is ac dependent and supplied automatically with demineralized water. However, during station blackout conditions, fire system water can be supplied by the diesel driven fire pump via a dc solenoid valve operated from the control room or the alternate shutdown building. Within four hours, the standby diesel generator will be available and can be used to restore the ac powered emergency condenser demineralized water makeup.

Emergency condenser shell side level indication and low level annunciation is available in the control room, and a low shell level indication light is available in the alternate shutdown building, allowing the operators to monitor and maintain emergency condenser shell level with fire system water.

Flow of primary coolant through the emergency condenser is maintained by natural circulation.

Summary

Safe shutdown can be achieved and maintained by use of the Emergency Condenser in conjunction with the Diesel Fire Pump supplying both Emergency Condenser shell side make-up and Primary Coolant System make-up. Within four hours, the standby diesel generator is expected to be available, returning the ac powered makeup sources. Monitoring will be accomplished by observing steam drum pressure to assure continued Emergency Condenser operation and Steam Drum level to determine the need for Primary Coolant make-up. Both of these instruments are located in the Alternate Shutdown Building and powered by the Alternate Shutdown Building Batteries which can support connected loads for 72 hours following a loss of offsite and onsite ac power.

Conclusion

In reference to the discussion above, achieving and maintaining safe shutdown during an SSE combined with the loss of offsite power is not dependent on emergency onsite ac power, i.e., the Emergency or Standby Diesel Generators. However, by verifying the seismic adequacy of the standby diesel generator, referencing the Station Blackout SSE, and requiring availability within four hours, the single failure criteria described in Section 3.1.2, Paragraph 3 of GIP-2 can be satisfied. The deviation originally proposed by Consumers Power is withdrawn.

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"With regard to the Licensee's proposed deviation from GIP-2, Section 9.1, the Staff assumes that the Licensee intended to reference numbers 16 and 17 in the current GIP-2, rather than 14. The Licensee indicated that it intends to deviate from these commitments in that it plans to use a Probabilistic Risk Assessment (PRA) approach to the performance of any modifications identified in outlier resolution. As stated in Section II.5 of SSER No 2, "It is the responsibility of the utility to resolve outliers using existing procedures (e.g., plant-specific procedural controls and QA requirements) as it would resolve any other seismic concerns." Consequently, the Staff finds that the use of PRA is not an acceptable method for resolving outliers. The Licensee should resolve the equipment outliers by either performing tests, engineering analysis, making physical repairs, or replacing the equipment."

Licensee Response From September 21, 1992

B) Deviation to GIP-2, Section 9.1, Number 14 states:

14. Proposed schedule for complete resolution, future modifications and replacements, or a simple statement explaining why corrective modifications or replacements of outliers will not be made.

Consumers Power plans to use a Probabilistic Risk Approach to the performance of any modification identified in outlier resolution.

Licensee Revised Response

The Staff is correct in assuming that Consumers Power intended to reference numbers 16 and 17 in the current GIP-2 rather than number 14. However, after further review, the original deviation proposed by Consumers Power is withdrawn.

Discussion

By letters submitted on June 7, 1985, revised September 3, 1985 and supplemented December 4, 1985, the "Plan for the Big Rock Point Integrated Assessment" was approved by the NRC and is documented in the Facility Operating License, License No DPR-6.

The Plan

Consumers Power Company (CPCo) has developed a comprehensive program which will enable the company to effectively manage implementation of significant changes to our Big Rock Point Plant which have been required, or proposed by, the NRC, as well as other measures to enhance plant safety and reliability which have been identified by the Company or other agencies. A description of the programs, identified as the "Integrated Assessment of Open Issues and Schedule for Issue Resolution (including Environmental Equipment Qualification and Generic Letter 82-33 Issues)" was submitted to the NRC by letter dated June 1, 1983. The term Issue Resolution as used herein refers to the actions necessary to resolve concerns (safety related or otherwise) which have been identified by the NRC or CPCo. This may include analyses, studies and/or plant modifications.

This program was developed to assess, coordinate and schedule all necessary work at the Big Rock Point Plant, including those mandated or proposed by the NRC, or identified by CPCo and others. The program objectives are to (1) satisfy regulatory requirements; (2) provide sufficient lead times for modifications; (3) minimize changes for operators; (4) effectively manage financial and human resources; and (5) specify the framework for changes to developed issue resolutions and associated schedules. This will be accomplished within the overall objective of plant safety and availability.

This program reflects the recognition by CPCo and the NRC that fiscal and manpower resources are finite and that a limit on the onsite manpower is necessary. The program integrates a significant portion of presently planned work at the Big Rock Point Plant over a nominal three-year period to ensure that individual issues are properly assessed and that the tasks associated with issue resolution are effectively scheduled and coordinated. It provides a means for new requirements to be accommodated taking into account schedule and resource constraints, as well as the importance of implementing a new requirement.

Conclusion

The Plan will be utilized to address the requirements set forth in GIP-2, Section 9.1, numbers 16 and 17.

IV. REQUEST FOR ADDITIONAL INFORMATION

With regard to defining seismic demand at the Big Rock Point Plant, Consumers Power Company stated in the original submittal that it will use the options provided in the GIP-2 for realistic median-centered and conservative, design in-structure response spectra, as appropriate, depending on the building, the location of equipment in the building, and equipment characteristics. The submittal went on further stating that "The licensing-basis spectra as described in Big Rock Point's Updated Final Hazards Summary Report Section 2.5.2.1 will be used and are considered to be a conservative design".

NUCLEAR REGULATORY COMMISSION
BIG ROCK POINT PLANT
RESPONSE TO GENERIC LETTER 87-02
SUPPLEMENT 1 - USI A-46 SQUG
February 18, 1993

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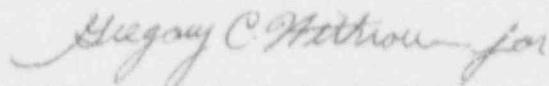
The Staff has requested additional information as follows:

1. Are the SEP spectra identical to the spectra as described in Big Rock Point's Updated Final Hazards Summary Report?
2. If the answer is negative to question No. 1, the licensee is requested to submit the Big Rock Point Updated Final Hazards Summary Report, and indicate the NRC Safety Evaluation Report (SER) number that accepted the spectra as the licensing-basis spectra, or provide other documentation which support the above licensee statement.

Licensee Response

The licensing-basis Safe Shutdown Earthquake (SSE) in-structure response spectra may be used as one of the options provided in the GIP for resolution of USI A-46. The licensing-basis spectra (Reg Guide 1.60 - Design Response Spectra for Seismic Design of Nuclear Power Plants, 0.12g earthquake or the NRC site specific 0.104 earthquake) as described in Section 2.5.2.1, Response Spectra, of the Big Rock Point Updated Final Hazards Summary Report is the design basis for the Big Rock Point Plant and is considered to be conservative design.

For added reference, Section 2.5 of the Big Rock Point Updated Final Hazards Summary Report is enclosed as Attachment 1. The NRC correspondence accepting the spectra as the license-basis spectra is identified in Section 2.5.2.1 of Attachment 1.


William L Beckman (Signed)

William L Beckman
Plant Manager

CC: Administrator, Region III, USNRC
NRC Resident Inspector - Big Rock Point

ATTACHMENT

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CONSUMERS POWER COMPANY
BIG ROCK POINT PLANT
DOCKET 50-155

RESPONSE TO A NRC SAFETY EVALUATION CONCERNING
120 DAY RESPONSE TO SUPPLEMENT 1 TO
GENERIC LETTER 87-02 (USI A-46)