

## Washington Public Power Supply System

P.O. Box 968 3000 George Washington Way Richland, Washington 99352 (509) 372-5000

September 28, 1984  
G02-84-524

Docket No. 50-397

Director of Nuclear Reactor Regulation  
Attention: Mr. A. Schwencer, Chief  
Licensing Branch No. 2  
Division of Licensing  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Dear Mr. Schwencer:

Subject: NUCLEAR PLANT NO. 2  
RESPONSE TO GENERIC LETTER 84-15,  
DIESEL GENERATOR RELIABILITY

- References:
- 1) Letter, D. G. Eisenhut (NRC) to All Licensees of Operating Reactors, Applicants for an Operating License and Holders of Construction Permits, Generic Letter 84-15, Diesel Generator Reliability dated July 2, 1984
  - 2) NSAC-79, A Limited Performance Review of Fairbanks Morse and General Motors Diesel Generators at Nuclear Plants
  - 3) Regulatory Guide 1.108, Periodic Testing of Diesel Generator Units Used as Onsite Electric Power Systems at Nuclear Power Plants
  - 4) NUREG/CR-0660, "Enhancement of Onsite Emergency Diesel Generator Reliability, February 1979"

As requested by reference 1, the Supply System hereby provides the following responses:

- Item 1. Provide a description of the current program to avoid cold fast start surveillance testing or intended actions to reduce cold fast starts.

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WNP-2 Response

Cold Fast Start Testing

WNP-2 units are equipped with keep warm systems, continuous pre-lube systems and heavy duty turbo charger drive trains. They are not started cold and they are not started without pre-lubrication. During surveillance tests, loads are applied by paralleling with the grid and loaded gradually to full power over a period of 45 - 60 seconds.

The Supply System does not consider this method of starting and loading as a "cold fast start". For the above reasons, a program to reduce cold fast starts at WNP-2 is not applicable; the ability to perform a cold fast start is effectively nullified by the keep warm, pre-lubed, heavy duty turbo charger design of the WNP-2 units. A program to reduce cold fast starts would only be applicable to units not comparably equipped as the WNP-2 units.

Other Testing

Although not having a cold fast start concern, the Supply System is of the opinion that other starting requirements specified by the Technical Specifications contribute to premature diesel engine degradation.

WNP-2 operates under the standard Technical Specifications referenced in Generic Letter 84-15 and is not affected by the proposed changes; however, the Supply System recommends that the number of required surveillance tests be reduced significantly by changing the periodicity of the 8 hour testing required by Technical Specification 3.8.1.1 to not more than once per 24 hours. Further reduction in surveillance test starts should be achieved by allowing credit for post-maintenance testing and actual demand starts accomplished outside the "staggered test basis" as specified by Technical Specification 4.8.1.1.2 providing the 31 day period was not exceeded.

- Item 2. Provide current reliability data for each diesel generator based on surveillance testing.

WNP-2 Response

Diesel Generator Reliability Data

<u>Generator</u>	<u>Failure Last 20 Starts</u>	<u>Failure Last 100 Starts</u>	<u>History</u>
DG1A	0	0	-
DG1B	1	1	Failed on July 9, 1984*
DG1C	0	0	

\*Generator Bearing Failure (See LER-84-075) -- not engine related

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- Item 3. Provide a description of the current program for attaining and maintaining a reliability goal for diesel generators.

#### WNP-2 Response

The reliability program at WNP-2 consists of an aggressive maintenance program, comprehensive evaluation of indicated operating parameters resulting in the immediate correction of any minor problem or perceived weaknesses as they become apparent in the WNP-2 units, and evaluation of incidents on similar units at other plants with corrective action as applicable on the WNP-2 units. Additionally, evaluation and incorporation of the manufacturer's recommended modifications and operating practices receive high priority and are evaluated and incorporated if appropriate.

It is the Supply System's position that the existing WNP-2 program exceeds the requirements and recommended practices of Reg. Guide 1.108, NUREG/CR-0660 and NSAC-79.

The statistical data contained in Appendix B of NSAC-79 encompasses 149 LER's pertaining to diesel generator failures from plants with EMD diesel engines. Of the 149 reported failures, two (1.3%) could possibly be attributed to cold fast starting practices. Therefore, the Supply System considers that overall reliability improvement of diesel generators requires much more effort than the simple reduction of cold fast starts, and should include careful trending and evaluation of individual components and sub-systems; which is the current WNP-2 practice.

#### Comments on Example Technical Specifications

The example Technical Specification allowing the option for warm pre-lubed starts prior to surveillance testing should result in improvement in the service time of the engines. The Technical Specification is interpreted to read that in the event of a failure to a specific unit, then only that specific unit is subject to increased testing. The Supply System agrees that this would reduce wear and degradation of the remaining units. Increased testing requirements do not increase the reliability of diesel engines or statistically indicate that reliability is increased. Specifically, it will only cause further wear and degradation of the unit. In the event of a failure, the root cause must be positively identified and corrected with due consideration to investigation of other units. The only meaningful requirement for testing is a demonstration that the required repair work was done correctly. Testing, in itself, provides a sense of false security. As an example, failure to start because of a failure of an electrical contactor, caused by dust or moisture, is not necessarily proven to be resolved by an additional seven successful starts in a short period of time. In this case, effort spent in identifying and correcting the contactor problem would be of more benefit than testing.

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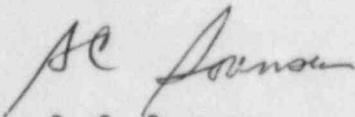
An additional suggested Technical Specification change would be to require that each failure report include a detailed failure analysis and evidence that the root cause was precisely identified and corrected. More frequent diesel generator testing should only be required when the root cause cannot be identified. The analysis may indicate that the failed component requires additional testing rather than a diesel generator test. Prolonged runs at load are only meaningful when the load carrying capability of the engine or the generator itself is in doubt. The statistical data of NSAC-79 indicates that this is rarely the case.

Summation

It is the Supply System's conclusion that WNP-2 meets or exceeds the Commission's intent for a Diesel Generator Increased Reliability Program and that fast cold starting, as an issue, is not applicable to this plant. WNP-2 maintains the required records and Preventive Maintenance Program as recommended by Reg. Guide 1.108 and NUREG/CR-0660 as well as detailed trending and analysis programs with emphasis on early trouble detection and correction. Coupled with the suggested relief gained by allowing credit for post maintenance starts, actual demands and reduced testing of non-affected units after a failure, the WNP-2 program, as it exists, would be vastly improved.

Should you have any questions, please contact Mr. P. L. Powell, Manager, WNP-2 Licensing.

Very truly yours,



G. C. Sorensen  
Regulatory Programs

PLP/tmh

cc: R Auluck - NRC  
WS Chin - BPA  
JB Martin - NRC RV  
AD Toth - NRC Site

STATE OF WASHINGTON )  
 )  
County of Benton )

Subject: Response to Generic Letter 84-15  
Diesel Generator Reliability

I, G. C. SORENSEN, being duly sworn, subscribe to and say that I am the Manager, Regulatory Programs, for the WASHINGTON PUBLIC POWER SUPPLY SYSTEM, the applicant herein; that I have full authority to execute this oath; that I have reviewed the foregoing; and that to the best of my knowledge, information and belief the statements made in it are true.

DATE 27 SEPT, 1984

G. C. Sorensen  
G. C. Sorensen, Manager  
Regulatory Programs

On this day personally appeared before me G. C. SORENSEN to me known to be the individual who executed the foregoing instrument and acknowledge that he signed the same as his free act and deed for the uses and purposes therein mentioned.

GIVEN under my hand and seal this 27th day of September, 1984.

Kathryn H. DuBois  
Notary Public in and for the  
State of Washington

Residing at Richland, wa

March 1988