



**Entergy
Operations**

Entergy Operations, Inc.
317 Bienville St.
New Orleans, LA 70112
Tel 504-595-2805
Te 504-739-6774

Raymond F. Burski
Manager
Safety & Regulatory Affairs

W3P90-1919
A4.05
QA

December 24, 1990

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Subject: Waterford 3 SES
Docket No. 50-382
License No. NPF-38
Request for Temporary Waiver of Compliance
Technical Specification 3/4.3.4, Turbine Overspeed Protection

Gentlemen:

This letter provides written documentation to followup Entergy Operations, Inc.'s discussion on December 21, 1990, and verbal request on December 24, 1990, regarding a temporary waiver of compliance from Waterford 3 Technical Specification 3/4.3.4, "Turbine Overspeed Protection" Surveillance Requirements 4.3.4.2a & b. These surveillances are required to be completed by December 25, 1990, to demonstrate operability of the turbine overspeed protection system. The temporary waiver of compliance is requested for a period of 72 hours to allow surveillance requirements to be completed by December 28, 1990.

Entergy Services, Inc. has provided information concerning weather predictions and the current status of area generation capability. The surveillance required by Technical Specifications has the potential to adversely impact plant operation, which would jeopardize the generating capacity required by this area. The basis for this request is attached.

Should you have further questions concerning the attached information, please contact me or Larry W. Laughlin at (504) 739-6331.

Very truly yours,

RFB/BRL/ssf

RFB/BRL/ssf

Attachment

cc: Messrs. R.D. Martin (NRC Region IV), D.L. Wigginton (NRC-NRR),
E.L. Blake, R.B. McGehee
NRC Resident Inspectors Office

9012280296 901224
PDR ADOCK 05000302
P PDF

*Appl
1/11*

Waterford 3 Temporary Waiver of Compliance
for Technical Specification 3/4.3.4,
"Turbine Overspeed Protection"

Surveillance Requirements

Waterford 3 Technical Specification 3/4.3.4 requires surveillance to demonstrate operability of the turbine overspeed protection system. Surveillance Requirements 4.3.4.2a & b require that the turbine overspeed protection system be demonstrated operable by:

- a. At least once per 31 days by cycling each of the following valves through at least one complete cycle from the running position:
 1. Four high pressure throttle valves.
 2. Four high pressure governor valves.
 3. Six low pressure reheat stop valves.
 4. Six low pressure reheat intercept valves.
- b. At least once per 31 days by direct observation of the movement of each of the above valves through one complete cycle from the running position.

This surveillance was last conducted on November 17, 1990, and is required to be completed by December 25, 1990, to meet Technical Specification requirements.

Basis of Request for Temporary Waiver

Entergy Services, Inc. has provided Waterford 3 with the following information concerning weather predictions and the current status of area generation capability:

Unseasonably cold weather is predicted for all of the Entergy control area for the next 5 days. Historically, weather of this nature results in the following:

- Curtailment of natural gas as generator boiler fuel requires that fuel oil be used as a replacement. Burning oil in most of the generating plants on the Entergy System is difficult and reduces the reliability of generator operation.
- Freezing weather following warm wet weather can cause the coal on the storage yard to freeze into a solid mass. Using frozen coal off the storage yard to fuel a coal plant is a very precarious operation and experience has shown that the expected generation capacity out of these units can be reduced from that normally expected.

Additionally:

- The Ray Braswell to Franklin 500 KV line was damaged by a tornado on Thursday, December 20, 1990, and will be out of service at least for the next several days. With this line out of service, the reliability and security of the Entergy transmission system is reduced. One additional transmission contingency (outage of the Grand Gulf to Franklin 500 KV line) would seriously jeopardize the ability of the Entergy transmission system to serve the New Orleans metropolitan area. Generation from the Waterford 3 nuclear plant would be critical under this scenario.
- Ninemile Point Unit #4 (A 700 MW gas fired generation unit in New Orleans area) currently has a waterwall tube leak. It is very likely that this unit will have to be taken off-line for repair in the next few days. If Waterford 3 is not on-line, losing Ninemile Point Unit #4 will dramatically increase the dependence of the New Orleans load on the already weakened Entergy transmission system.
- Little Gypsy Unit #3 (A 500 MW gas fired generation unit in New Orleans area) is the only other large unit in the New Orleans area that is not currently dispatched. This unit is currently unavailable because of a broken expansion joint.
- Grand Gulf Nuclear Station is currently off-line for repair of a re-circulating water pump and may be out of service for the next two weeks.
- Arkansas Nuclear One Unit #1 is late in returning from a scheduled outage. While this unit may be critical and on-line by this weekend, the unit will have to operate at 35% power for 72 hours.

The surveillance required by Technical Specification has the potential to adversely impact plant operation. Whenever changes are made to reactor power levels, this presents an additional demand cycle on plant systems. For this reason, the probability of equipment malfunctions resulting in reactor trip is higher when power changes are made than when the reactor is operated at a steady state power level. Performance of the surveillance discussed herein would thus increase the exposure of Waterford 3 to a reactor trip at a time when Waterford 3 power is very much needed to support the electrical grid in our area. A 72-hour waiver of compliance would allow Waterford 3 to complete the surveillance following the predicted critical period.

Safety Significance and Potential Consequences

This request involves a 72 hour delay for the surveillance which demonstrates operational integrity of valves in the turbine overspeed protection system. A 72 hour increase of the original surveillance period is not a significant increase, and therefore has minimal impact on the likelihood of component failure. A review of surveillances conducted since Refuel 3 indicates that these valves have functioned favorably.

Technical Specification 4.3.4.2 requires cycling each of 20 turbine valves every 31 days to demonstrate that the turbine overspeed protection system is operable. The turbine overspeed protection system exists to prevent the turbine from running at excessive speeds, which could generate missiles. These missiles could, in turn, impact and damage safety related equipment.

According to FSAR Section 10.2.2.2.8, the overspeed protection trips the turbine if required after a partial or complete loss of turbine load. The overspeed protection system trips the turbine before it can reach its design overspeed of 120% of rated speed. The loss of turbine load event and the turbine trip events are analyzed events, presented in FSAR Section 15.2. The frequency of performance of Technical Specification 4.3.4.2 has no affect upon the consequences of these events. The turbine overspeed protection system exists to protect the turbine and to protect against missile damage; it does not fulfill a direct function for any safety analyses.

FSAR Section 3.5.1.3 discusses protection of the plant against missiles generated by the turbines. The strike damage probabilities for missiles due to either a design overspeed or a destructive overspeed condition is less than 10^{-3} per overspeed event. Delaying performance of Technical Specification 4.3.4.2 31 day surveillances would have a minimal, if any, effect upon the probability of such an overspeed event. Thus, the probability of an overspeed event occurring which damages safety related equipment would remain basically unchanged from the probabilities in the FSAR.

In conclusion, this request for an increased surveillance period will not result in a significant increase in the probability or consequence of the previously evaluated accidents related to turbine overspeed. Therefore, continued operation of Waterford 3 for the 72 hour period in question is acceptable.