OYSTER CREEK NUCLEAR GENERATING STATION
PROVISIONAL OPERATING LICENSE NO. DPR-16
DOCKET NO. 50-219
TECHNICAL SPECIFICATION CHANGE REQUEST NO. 119

Pursuant to 10CFR50.91, an analysis concerning significant hazards considerations is provided below:

1. Section to be changed:

   3.1 and 4.2

2. Extent of change:

   Scram Dump Volume (SDV) modifications were performed at the Oyster Creek Nuclear Generating Station in accordance with the BWR Owner's Group recommendations in response to IE Bulletin 80-17 and its supplements.

   As a result of providing two SDV instrument volumes to monitor water accumulation, the high water level scram and rod block set points have been changed. Section 3.1 has been modified to reflect these changes. In addition, the scram discharge volume drain and vent valves closure times in Section 4.2 has been changed to be in agreement with the BWR Owners Group recommendations.

3. Discussion:

   On June 28, 1980, during a routine shutdown of the Browns Ferry Unit 3 reactor, a manual scram from approximately 36% power failed to insert about 40% of the control rods. Two additional manual scrams followed by an automatic scram were required before all control rods were fully inserted. The total time that elapsed from the initial scram until all rods were inserted was approximately 15 minutes.

   Subsequent investigations by the licensee, General Electric Company, and the NRC staff narrowed the cause of the problem to an accumulation of water in the SDV header at the time of the first scram. It is believed that water accumulated because the SDV system venting and/or draining were obstructed. Furthermore, the accumulation of water was not detected by SDV level instruments which input to the reactor protection system. It was believed that the SDV level instrumentation was designed to scram the reactor before water accumulated in the scram discharge volume that could hinder scram. As a result, two I&E Bulletins addressing both short and long term programs were issued.

   The long term program (which TSCR #119 is in response to) addressed SDV system design. In order to improve the overall design of the SDV system an NRR task force has been working with a subgroup of the BWR Owners Group to develop revised scram discharge system design and safety criteria. The NRC has endorsed the criteria developed by the BWR Owners Group. GPUN has designed a modification which will meet the criteria developed by the BWR Owners Group. The modification will ensure that

there is sufficient volume available in the SDV to allow all 137 control rods to scram in the event that plant conditions warrant this action. These hardware changes have necessitated changing some of the setpoints associated with the system. However, the safety function of the SDV and its associated instruments have not changed. Since the modification and associated technical specificants provide the redundant instrument volumes with necessary instrumentation and appropriate setpoints, the safety of the plant will be enchanced, thereby providing a greater degree of protection for the health and safety of the public.

4. Determination:

We have determined that the subject change request involves no significant hazards in that operation of the Oyster Creek Nuclear Generating Station in accordance with Technical Specification Change Request No. 119 would not:

1. Involve a significant increase in the probability or consequences of an accident previously evaluated; or

2. Create the possibility of a new or different kind of accident from any accident previously evaluated; or

3. Involve a significant reduction in a margin of safety.

isolation, initiate automatic depressurization in conjunction with low-low-reactor water level, initiate the standby gas treatment system and isolate the reactor building. The scram function shuts the core down during the loss-of-coolant accidents. A steam leak of about 15 gpm and a liquid leak of about 35 gpm from the primary system will cause drywell pressure to reach the scram point; and , therefore the scram provides protection for breaks greater than the above.

High drywell pressure provides a second means of initiating the core spray to mitigate the consequences of a loss-of-coolant accident. Its set point of 2 psig initiates the core spray in time to provide adequate core cooling. The break-size coverage of high drywell pressure was discussed above. Low-low water level and high drywell pressure in addition to initiating core spray also causes isolation valve closure. These settings are adequate to cause isolation to minimize the offsite dose within required limits.

It is permissible to make the drywell pressure instrument channels inoperable during performance of the integrated primary containment leakage rate test provided the reactor is in the cold shutdown condition. The reason for this is that the Engineered Safety Features, which are effective in case of a LOCA under these conditions, will still be effective because they will be activated by low-low reactor water level.

The scram discharge volume has two separate instrument volumes utilized to detect water accumulation. The high water level setting is based on the design that 18.36 gallons (59 inches) of water, detected by either set of level instruments will permit the 137 control rods to scram. To provide further margin, an accumulation of 9 gallons (29 inches) of water detected in either instrument volume will result in a rod block and an alarm, while an accumulation of 3.76 gallons (12.1 inches) of water detected in either instrument volume results in an alarm.

Detailed analyses of transients have shown that sufficient protection is provided by other scrams below 45% power to permit bypassing of the turbine trip and generator load rejection scrams. However, for operational convenience, 40% of rated power has been chosen as the setpoint below which these trips are bypassed. This setpoint is coincident with bypass valve capacity.

A low condenser vacuum scram trip of 23" Hg has been provided to protect the main condenser in the event that vacuum is lost. A loss of condenser vacuum would cause the turbine stop valves to close, resulting in a turbine trip transient. The low condenser vacuum trip anticipates this transient and scrams the reactor. The condenser is capable of receiving bypass steam until 7" Hg vacuum thereby mitigating the transient and providing a margin.

TABLE 3.1.7 PROTECTIVE INSTRUMENTATION REQUIREMENTS

Function	Trip Setting	Reactor Modes in which Function Must Be Operable: Shutdown	Refuel	Startup	Run	Min. No. of Operable or Operating [tripped] Trip systems	Min. No.of Instrument Channels Per Operable Trip Systems	Action Required*
A. Scram								Insert control rods
1. Manual Scram		X	X	X	X	2	1	
2. High Reactor Pressure	**		X(s)	X	X	2	2	
3. High Drywell Pressure	≤ 2 psig		X(u)	X(u)	X	2	2	
4. Low Reactor Water Level	**		X	X	X	2	2	
5. a. High Water Level in Scram Discharge Volume North Side	≤ 18.36 gal.		X(a)	X(z)	X(z)	2	4	
b. High Water Level in Scram Discharge Volume South Side	≤ 18.36 gal.		X(a)	X(z)	X(z)	2	4	
6. Low Condenser Vacuum	≥ 23" hg.		X(b)	X(b)	X	2	2	

Function	Trip Setting	Reactor Modes in which Function Must Be Operable: Shutdown	Refuel	Startup	Run	Min. No. of Operable or Operating [tripped] Trip systems	Min. No.of Instrument Channels Per Operable Trip Systems	Action Required*
7. High Radiation in Main Steam Line Tunnel	< 10 x normal Background		X(s)	X	X	2	2	
8. Average Power Range Monitor (APRM)	**		X(c,s)	X(c)	X(c)	2	3	
9. Intermediate Range Monoitor (IRM)	**		X(d)	X(d)		2	3	
10. Main Steamline Isolation Valve Closure	**		X(b,s)	X(b)	X	2	4	
11. Turbine Trip Scram	**				X(j)	2	4	
12. Generator Load Rejection Scram	**				X(j)	2	2	

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K. Rod Block								No control rod withdrawals permitted
1. SRM Upscale	≤5 x 10^5		X	X(1)		1	3(y)	
2. SRM Downscale	≥100 cps(f)		X	X(1)		1	3(y)	
3. IRM Downscale	≥5/125 fullscale(g)		X	X		2	3	
4. APRM Upscale	**		X(s)	X	X	2	3(c)	
5. APRM Downscale	≥2/150 fullscale				X	2	3	
6. IRM Upscale	≤108/125 fullscale		X	X		2	3	
7. a) water level high scram discharge volume North	≤ 9 gallons		X(z)	X(z)	X(z)	1	1 per instrum. volume	
b) water level high scram discharge volume South	≤ 9 gallons		X(z)	X(z)	X(z)	1	1 per instrum. volume.	
L. Condenser Vacuum Pump Isolation								Insert Control Rods
1. High Radiation in Main Steam Tunnel	≤ 10 x Normal background		During Startup and Run when vacuum pump 1 operating			2	2	

Function	Trip Setting	Reactor Modes in which Function Must Be Operable: Shutdown	Refuel	Startup	Run	Min. No. of Operable or Operating [tripped] Trip systems	Min. No. of Instrument Channels Per Operable Trip Systems	Action Required*
M. Diesel Generator Load Sequence Timers	Time delay after energization of relay							
1. Containment Spray Pump	40 sec ± 15%	X	X	X	X	2(m)	1(n)	Consider containment spray loop inoperable and comply with Spec. 3.4.C (See note q.).
2. CRD pump	60 sec ± 15%	X	X	X	X	2(m)	1(n)	Consider the pump inoperable and comply with Spec. 3.4.D (See Note q)
3. Emerg. Service Water Pump (r)	45 sec. ± 15%	X	X	X	X	2(m)	1(n)	Consider the loop inoperable and comply with Spec. 3.4.C (See Note q)
4. Service Water Pump (aa)	120 sec. ± 15% (SK1A) 10 sec. ± 15% (SK2A) (SK7A) (SK8A)	X	X	X	X	2(o)	2(p)	Consider the
5. Closed Cooling Water Pump (bb)	166 Sec. ± 15%	X	X	X	X	2(m)	1(n)	Consider the pump inoperable and comply within 7 days (See Note q)

F. At specific power operation conditions, the actual control rod configuration will be compared with the expected configuration based upon appropriately corrected past data. This comparison shall be made every equivalent full power month. The initial rod inventory measurement performed when equilibrium conditions are established after a refueling or major core alteration will be used as base data for reactivity monitoring during subsequent power operation throughout the fuel cycle.

G. At power operating conditions, the actual conrtrol rod density will be compared with the 3.5 percent control rod density included in Specification 3.2.B.6. This comparison shall be made every equivalent full power month.

H. The scram discharge volume drain and vent valves shall be verified open at least once per 31 days, except in shutdown mode*, and shall be cycled at least one complete cycle of full travel at least quarterly.

I. All withdrawn control rods shall be determined OPERABLE by demonstrating the scram discharge volume drain and vent valves OPERABLE. This will be done at least once per refueling cycle by placing the mode switch in shutdown and by verifying that:

a. The drain and vent valves close within 30 seconds after receipt of a signal for control rods to scram, and

b. The scram signal can be reset and the drain and vent valves open when the scram discharge volume trip is bypassed.

Basis: The core reactivity limitation (Specification 3.2.A) requires that core reactivity be limited such that the core could be made subcritical at any time during the operating cycle, with the strongest operable control rod fully withdrawn and all other operable rods fully inserted. Compliance with his requirement can be demonstrated conveniently only at the time of refueling. Therefore, the demonstration must be such that it will apply to the entire subsequent fuel cycle. The demonstration is performed with the reactor in the cold, xenon-free condition and will show that the reactor is sub-critical at that time by at least R + 0.25% Δk with the highest worth operable control rod fully withdrawn.

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* These valves may be closed intermittently for testing under administrative control.