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Electric and Gas
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Robert L. Mittl General Manager
Nuclear Assurance and Regulation

June 21, 1985

Director of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
7920 Norfolk Avenue
Bethesda, Maryland 20814

Attention: Mr. Walter Butler, Chief
Licensing Branch 2
Division of Licensing

Gentlemen:

SAFETY EVALUATION REPORT TECHNICAL SPECIFICATION ISSUES
HOPE CREEK GENERATING STATION
DOCKET NO. 50-354

Attachment 1 is a current list which provides a status of the Technical Specification Issues identified in Section 16 of the Safety Evaluation Report (SER). Items identified as "complete" are those for which PSE&G has provided responses and no confirmation of status has been received from the staff. We will consider these items closed unless notified otherwise. In order to permit timely resolution of items identified as "complete" which may not be resolved to the staff's satisfaction, please provide a specific description of the issue which remains to be resolved.

Enclosed for your review and approval (see Attachment 3) are the resolutions to the SER Technical Specification Issues listed in Attachment 2.

Should you have any questions or require any additional information on these items, please contact us.

Very truly yours,

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Attachments

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Director of Nuclear
Reactor Regulation

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6/21 '85

C D. H. Wagner
USNRC Licensing Project Manager (w/attach.)

A. R. Blough
USNRC Senior Resident Inspector (w/attach.)

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Attachment 1

<u>SER TECHNICAL SPECIFICATION ISSUE</u>	<u>SER SECTION NUMBER</u>	<u>SUBJECT</u>	<u>STATUS</u>	<u>R. L. MITTL TO A. SCHWENCER LETTER DATED</u>
1	2.4.11.2	Service water intake temperature	Complete	4/10/85
2	2.4.14	Closing of doors and hatches	Complete	4/10/85
3	3.9.6	Pressure isolation valves	Complete	6/21/85
4	4.4.4	Thermal-hydraulic instability	Complete	4/10/85
5	4.4.4	Single-loop operation	Complete	4/10/85
6	4.4.5	Crud effects	Complete	4/10/85
7	4.4.6	Loose parts monitoring system channel operability	Complete	4/10/85
8	5.2.2	Safety/relief valve (SRV) test program	Complete	5/13/85
9	5.2.5	Reactor coolant pressure boundary leakage rates	Complete	4/10/85
10	5.4.6	Reactor core isolation cooling pump testing	Complete	4/10/85
11	5.4.7	Residual heat removal system pump operability	Complete	4/10/85
12	6.2.1.6	Torus/drywell vacuum breaker and vent system testing	Complete	6/21/85
13	6.2.1.6	Vacuum breaker position indication accuracy	Complete	5/13/85
14	6.2.3	Testing of inleakage rate and draw- down time	Complete	4/10/85
15	6.2.4.1	Leakage testing for valves with resilient seals	Complete	6/21/85
16	6.2.6	Containment isolation valve leakage	Complete	6/21/85

Attachment 1 (Cont'd)

<u>SER TECHNICAL SPECIFICATION ISSUE</u>	<u>SER SECTION NUMBER</u>	<u>SUBJECT</u>	<u>STATUS</u>	<u>R. L. MITTL TO A. SCHWENCER LETTER DATED</u>
17	6.2.6, 6.7, 15.6.5.2	Main steam isolation valve leak rate testing	Complete	6/21/85
18	6.2.6	Various valve leak rates	Complete	6/21/85
19	6.3.4.2	Emergency core cooling system (ECCS) subsystem flow rates	Complete	5/13/85
20	6.3.4.2	ECCS subsystem operating sequence	Complete	5/13/85
21	6.5.1.3	Water seal bucket drain tap surveillance	Complete	4/10/85
22	7.2.2.3	Testability of plant protection system at power	Complete	5/13/85
23	7.2.2.8, 7.6.2.2	Anticipated transients without scram mitigation	Complete	6/10/85
24	7.2.2.9	Reactor mode switch	Complete	5/13/85
25	7.3.2.3	Freeze protection of water-filled lines	Complete	6/10/85
26	7.4.2.3	Remote shutdown system operability	Open	
27	7.6.2.1	Low-pressure/high-pressure systems interlocks	Open	
28	7.6.2.3	Average power range monitor electrical protection assemblies	Complete	5/13/85
29	7.7.2.2	Nonsafety-related equipment operability	Complete	5/13/85
30	8.3.1.3	Diesel generator connected loads	Complete	4/10/85
31	8.3.1.7	Load sequencer logic	Complete	4/10/85
32	8.3.2.7	DC system monitoring	Complete	4/10/85

Attachment 1 (Cont'd)

<u>SER TECHNICAL SPECIFICATION ISSUE</u>	<u>SER SECTION NUMBER</u>	<u>SUBJECT</u>	<u>STATUS</u>	<u>R. L. MITTL TO A. SCHWENCER LETTER DATED</u>
33	8.3.3.3.5	Testing of breaker time-overcurrent trip characteristics	Complete	5/13/85
34	8.3.3.4.1	Periodic system testing	Complete	4/10/85
35	8.3.3.4.2	Load sequencer testing	Complete	4/10/85
36	8.3.3.5.4	Testing of fuses	Complete	4/10/85
37	9.1.3	Fuel pool cooling system pumps	Open	
38	9.2.1	Station service water pump testing	Complete	4/10/85
39	9.2.2	Safety auxiliaries cooling system and reactor auxiliaries cooling system pump availability	Complete	4/10/85
40	9.2.2	Safety auxiliaries operability to ensure diesel generator cooling	Open	
41	9.2.7	Control area chilled water system availability	Open	
42	9.3.1, 9.3.6	Air quality testing	Complete	5/13/85
43	9.3.2	Core damage estimate procedure	This is a confirmatory item.	
44	9.5.1.5	Fire watch	Complete	4/10/85
45	10.2	Turbine steam valve inspection	Complete	4/10/85
46	10.4.4	Turbine bypass valve surveillance	Complete	4/10/85
47	15.2	Turbine bypass system and level 8 high-water trip performance	Complete	5/13/85
48	15.4.9	Scram speed	Complete	5/13/85
49	15.6.4	Primary coolant activity	Complete	5/13/85

Attachment 1 (Cont'd)

<u>SER TECHNICAL SPECIFICATION ISSUE</u>	<u>SER SECTION NUMBER</u>	<u>SUBJECT</u>	<u>STATUS</u>	<u>R. L. MITTL TO A. SCHWENCER LETTER DATED</u>
50	15.6.4	Main steam isolation valve closure time	Complete	4/10/85
51	15.9.3	SRV failure reporting	Complete	4/10/85
52	15.9.3	Automatic depressurization system logic	Complete	5/13/85

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ATTACHMENT 2

<u>SER TECHNICAL SPECIFICATION ISSUE</u>	<u>SER SECTION</u>	<u>SUBJECT</u>
3	3.9.6	Pressure isolation valves
12	6.2.1.6	Torus/drywell vacuum breaker and vent system testing
15	6.2.4.1	Leakage testing for valves with resilient seals
16	6.2.6	Containment isolation valve leakage
17	6.2.6, 6.7, 15.6.5.2	Main steam isolation valve leak rate testing
18	6.2.6	Various valve leak rates

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ATTACHMENT 3

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SER Technical Specification Issue No. 3 (SER Section 3.9.6)
Pressure isolation valves

By letter dated September 12, 1984, the applicant committed to meet the staff's stated leak test rate requirements as well as the staff's stated requirements for intervals between tests of pressure isolation valves (PIVs). Also, the applicant submitted a list of PIVs, which was reviewed by the staff and found acceptable. The following items remain to be confirmed by the staff when the Technical Specifications and inservice test program are reviewed:

- (1) The applicant must demonstrate that the test method that will be used for inservice testing of PIVs will accurately or conservatively indicate water leak rates at reactor operating temperature and pressure.

Response

This item will be addressed in the response to SER Confirmatory Item No. 3 which is scheduled to be provided by July 15, 1985.

- (2) Limiting conditions for operation indicating those events and time schedules that will initiate the requirements to leak test PIVs, in accordance with staff requirements, must be stated in the Technical Specifications and reflected in the inservice test program. Current staff requirements are outlined in staff Request for Additional Information (RAI) Item 210.56, which is in an attachment to a letter to the applicant dated March 19, 1984.

Response

HCGS Draft Technical Specification Sections 3.4.8, 4.4.8.1, and 4.4.8.2 specify the events and time schedules that will initiate the requirements to leak test PIVs.

- (3) Limiting conditions for operation indicating allowable leak rates for PIVs, in accordance with staff requirements, must be stated in the Technical Specifications and reflected in the inservice test program. The current staff requirement

outlined in staff RAI Item 210.56 is that PIVs shall be limited to a maximum water leak rate of 1 gpm at reactor operating temperature and pressure.

Response

HCGS Draft Technical Specification Sections 3.4.8.e & f provide the limiting conditions for operation indicating the allowable leak rates for PIVs.

SER Technical Specification Issue No. 12 (SER Section 6.2.1.6) Torus/drywell vacuum breaker and vent system testing

To minimize the potential for steam bypass, the staff will require the applicant to commit to

- (1) Perform operational testing of the torus-to-drywell vacuum breakers once each month and
- (2) Perform a low-pressure leakage test of the drywell-to-torus vent system at the end of each refueling outage at a pressure slightly less than that corresponding to vent submergence. The staff will include a requirement for these periodic tests in the Technical Specifications. The applicant has committed to perform these periodic tests.

Response

HCGS Draft Technical Specification Sections 4.6.4.1.b and 4.6.2.1.f provide the surveillance requirements (1) and (2) above, respectively.

SER Technical Specification Issue No. 15 (SER Section 6.2.4.1) Leakage testing for valves with resilient seals

The applicant has committed to add the following provisions to the Technical Specifications for the leak testing of purge/vent line isolation valves:

Leakage integrity tests shall be performed on the containment isolation valves with resilient material seals in (a) active purge/vent systems (i.e., those which may be operated during plant operating Modes 1 through 4) at least once every three months and (b) passive purge system (i.e., those which must be administratively controlled closed during reactor operating Modes 1 through 4) at least once every six months.

Response

HCGS Draft Technical Specification Surveillance Requirements 4.6.1.8.2 requires each drywell and suppression chamber purge supply and exhaust isolation valve with resilient material seals to be leak rate tested at least once per six months on a staggered test basis, and Surveillance Requirement 4.6.1.8.3 requires each operated drywell and suppression chamber purge supply and exhaust isolation valve with resilient material seals to be leak rate tested within 24 hours after each closing of the valve except when being used for multiple cycles then at least once per 72 hours. The measured leakage rate for any penetration boundary shall be less than or equal to 0.05 La when pressurized to Pa (48.1) psig.

These technical specification surveillance requirements meet the intent of this SER technical specification issue.

SER Technical Specification Issue No. 16 (SER Section 6.2.6)
Leak testing of containment isolation valves tested with
water

The combined leakage from all these valves will satisfy the requirements of 10 CFR 100 regarding the site radiological safety analysis and will be included in the plant Technical Specifications. This leakage will be excluded when determining the combined leakage rate for all penetrations and valves as specified in Section III.C.3 of Appendix J.

Response

HCGS Draft Technical Specification Sections 3.6.1.2.f and 4.6.1.2.g provide the appropriate limiting conditions for operation and leak test surveillance requirements for those valves hydrostatically tested.

SER Technical Specification Issue No. 17 (SER Section 6.2.6, 6.7, 15.6.5.2) Main steam isolation valve leak rate testing

- 6.2.6 Testing of the two MSIV's simultaneously, between the valves, at 1.10 Pa would lift the disk at the inboard valve and would result in a meaningless test. The proposed test calls for a test pressure of approximately 20 psig to avoid lifting the disk at the inboard valve. The total observed leakage through both the outboard MSIV and the MSSV would then be conservatively assigned to the penetration and specified separately in the Technical Specifications. The staff concludes that this procedure is acceptable. See Section 6.7 of this report for more information on the MSIVSS.
- 6.7 The staff's conclusions are based on the Standard Technical Specifications MSIV leakage rate of 11.5 scfh per valve. The applicant has not committed to use this leakage rate limit; however, the staff will require that the Hope Creek Technical Specification conform to this limit unless a different valve is proposed by the applicant.

Response

HCGS Draft Technical Specification Section 3.6.1.2d and 4.6.1.2.f provide appropriate limiting conditions for operation and surveillance requirements for leak testing the main steam isolation valves to demonstrate their operability.

The MSIV sealing system is designed to maintain the seal gas pressure to 5 psi above the reactor vessel pressure. The system will not operate when the main steam line pressure is above 20 psig. Testing is performed when the reactor vessel is depressurized, therefore, the leak test pressure will be 5 psig. FSAR Sections 5.4.5.4 and 6.2.4.4 will be revised in the next amendment to clarify the description of this test method.

HCGS Draft Technical Specification Section 3.6.1.2.d specifies an allowable leakage rate of less than or equal to 11.5 scfh for each main steam isolation valve, when tested at 5 psig (seal system **AP**).

SER Technical Specification Issue No. 18 (SER Section 6.2.6)
Various valve leak rates

(1) Main Steam Isolation Valve Sealing System (MSIVSS)

Testing of the two MSIVs simultaneously, between the valves, at 1.10 Pa would lift the disk at the inboard valve and would result in a meaningless test. The proposed test calls for a test pressure of approximately 20 psig to avoid lifting the disk at the inboard valve. The total observed leakage through both the outboard MSIV and the MSSV would then be conservatively assigned to the penetration and specified separately in the Technical Specifications. The staff concludes that this procedure is acceptable. See Section 6.7 of this report for more information on the MSIVSS.

The staff concludes that leak testing the MSIVs in the manner described above is an acceptable alternative to the requirements of Appendix J.

Response

See response to SER Technical Specification Issue No. 17.

(3) Hydrostatic Testing of Containment Isolation Valves

Section III.C.2 of Appendix J to 10 CFR 50 requires that valves, unless pressurized with fluid from a seal system, shall be pressurized with air or nitrogen for leak testing purposes. There are a number of liquid-filled systems, however, that are specifically designed to remain intact following a LOCA and thus provide a water seal for the system isolation valves or ensure that only liquid leakage from the containment will occur. Because of this, the applicant proposes to perform hydrostatic testing to determine the leak-tightness of the following isolation valves:

- (a) pump suction valves for residual heat removal, high pressure core injection, core spray, and reactor core isolation systems

- (b) turbine exhaust valves for high pressure core injection and reactor core isolation cooling systems
- (c) test and minimum flow valves for high pressure core injection, residual heat removal, reactor core isolation cooling, and core spray systems
- (d) torus water cleanup supply valves

For the isolation valves in these system lines, the applicant has shown that (a) the flow paths associated with these lines terminate below the low water level in the suppression pool, (b) a water seal is ensured during normal plant operation and for more than 30 days following an accident requiring containment isolation, and (c) it is not credible that these isolation valves will be exposed to the containment atmosphere at any time following the accident.

The combined leakage from all these valves will satisfy the requirements of 10 CFR 100 regarding the site radiological safety analysis and will be included in the plant Technical Specifications. This leakage will be excluded when determining the combined leakage rate for all penetrations and valves as specified in Section III.C.3 of Appendix J.

Response

See response to SER Technical Specification Issue No. 16.

(5) Traversing Incore Probe (TIP) System Testing

To ensure that the shear valve will perform its intended function, the staff asked the applicant to do the following, and the applicant has agreed:

- (a) Verify the continuity of the explosive charge at least once every 31 days.

- (b) Initiate one of the explosive squib charges at least once every 18 months. The replacement charge for the explosive valve shall be from the same manufactured batch as the one of that batch successfully fired.
- (c) All charges should be replaced according to the manufacture's recommended lift time.

Response

- (a) HCGS Draft Technical Specification Section 4.6.3.5 provides the surveillance requirement to verify continuity of the explosive charge at least once per 31 days.
- (b) These valves are ASME IWV Category D valves and are tested in accordance with Technical Specification Section 4.0.5. This valve testing, pursuant to ASME, requires 20 percent of the charges to be removed, fixed, and replaced every two years with charges from a fresh batch. This technical specification requirement meets the intent of this SER technical specification issue. FSAR Section 6.2.4.4(h) will be revised in the next amendment to clarify this test description.
- (c) This item is addressed in HCGS Maintenance Department Procedure MD-CM.SE - 005 (Q).