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Georgia Power
the southern electric system

U. S. Nuclear Regulatory Commission
Office of Inspection and Enforcement
Region II - Suite 3100
101 Marietta Street, NW
Atlanta, Georgia 30303

REFERENCE:
RII: JPO
50-321/50-366
I&E Bulletin 80-24

ATTENTION: Mr. James P. O'Reilly

Gentlemen:

Enclosed is the Georgia Power Company (GPC) response to I&E Bulletin 80-24, which required certain actions to be taken by GPC.

PLANT HATCH UNIT 1:

1. Provide a summary description of all open* cooling water systems present inside containment. Your description of the cooling water systems must include: (a) Mode of operation during routine reactor operation and in response to a LOCA; (b) Source of water and typical chemical content of water; (c) Materials used in piping and coolers; (d) Experience with system leakage; (e) History and type of repairs to coolers and piping systems (i.e., replacement, weld, braze, etc); (f) Provisions for isolating portions of the system inside containment in the event of leakage including vulnerability of those isolation provisions to single failure; (g) Provisions for testing isolation valves in accordance with Appendix J to 10 CFR 50 (h) Instrumentation (pressure, dew point, flow, radiation detection, etc.) and procedures in place to detect leakage; and (i) Provisions to detect radioactive contamination in service water discharge from containment.

GPC RESPONSE:

1.a The drywell cooling system is composed of 6 cooling units (T47-B007A&B, -B008A&B, -B009A&B) each with 2 fans. During routine reactor operation, 1 fan in each unit runs while the other is on standby. Inside each cooling unit are 2 cooling coils. Each cooling coil is activated when its respective fan is operating. Normally only 1 fan (and 1 coil) in each cooling unit is operating. However, both fans (and both coils) can be called on to operate in tandem.

In response to a LOCA, all of the fans shut off causing all of the air-operated inlet water gate valves (P41-F043A&B, -F044A&B, -F045A&B, -F046A&B, -F047A&B, and -F048A&B) to close. The system is also equipped with a LOCA override switch in the control room which allows operation of Fans 1 and 2, (thus cooling water circulation) for Units T47-B007A&B and -B008A&B.

GPC RESPONSE (Continued)

1.b The P41 system which feeds the drywell cooling fan units consists of plant service water with its original source being the Altamaha River. Data taken by the Plant Hatch chemistry lab on 12/10/80 indicate the following:

SiO_2 (ppm)	5.0
ph	7.7
Temperature (^oF)	55.4
Turbidity (ntu)	14
Conductivity ($\frac{\mu mho}{cm}$)	106
Total Hardness (ppm)	23

1.c All of the cooling water piping in the drywell leads from isolation valve P41-F049 and ends at isolation valve P41-F050. The piping is carbon steel which is seismic I rated with a design rating of 180 psig at 125 degrees Fahrenheit and a service condition rating of 140 psig at 95 degrees Fahrenheit maximum.

The coolers consist of the following materials:

1. Framing is galvanized steel per ASTM A526-67
   a. side plates - 12 gage (except T47-B009A&B which are 10 gage)
   b. end plates - 16 gage
   c. center plates - 16 gage
2. Tubes to be 5/8" O.D. x .049" wall
3. Headers to be 3-1/8" O.D. x .090" wall

   (2 and 3: 90-10 cupro nickel per ASTM Bill-699)
4. Cleanable return bends to be cast brass B5-5-5-5.
5. Fins to be cooper .009" thick per ASTM B152 alloy#110.
6. "O" rings for STD temperature (225 degrees Fahrenheit maximum water temperature)..
7. Header stubs and nipples to be sched. 40 steel pipe per ASTM A-120.

1.d A review of LER's and maintenance requests revealed no history of system leakage.

GPC RESPONSE (Continued)

1.e Listed below is a history of repairs to the drywell coolers and piping systems.

1. MR 1-77-1042 - Installed 3/4" union joint on drain lines for T47-B007A&B, -B008A&B and -B009A&B.
2. MR 1-78-3904 - Fan for cooler T47-B007B was binding on the housing. New bearings were installed and problem was solved.
3. MR 1-78-2690 - Replaced T47-B007A Fan #1.
4. MR 1-79-4895, 4827, 4828 - For 1P41-SWH-167, 168 cut pipe trunion and rewelded pipe in drywell.
5. MR 1-79-2684 - Replaced T47-B009B Fan #2 because the motor winding shorted.

1.f The drywell cooling air system consists of coolers T47-B007A&B, -B008A&B and -B009A&B. Each cooler Unit A or B consists of 2 water cooling coils, each equipped with its own associated fan labeled 1 or 2. On the inlet side of each of these coils is an air-operated gate valve. This valve is an NOFO valve that closes on a loss of fan. Therefore, this portion of the system can be isolated by shutting the fan off.

Preceding the valve and the valve that leads to the sister coil (for example T47-B007A Fan 1 and Fan 2 coils) is a manually operated gate valve which could isolate both coils of the cooling unit. Each of the 6 units is set up in this manner. An isolation valve P41-F049, located outside the primary containment serves to isolate the entire drywell cooling system from those outside the primary containment.

On the discharge side of the system, each of the water cooling coil units (for example T47-B007A Fan #1) has a manually operated gate valve and a check valve. An isolation valve P41-F050 located outside of the containment works with P41-F049 to isolate the entire drywell cooler service water system from systems outside of primary containment.

1.g The inboard isolation barrier for the reactor building service water system (1P41) is a closed system inside primary containment. The closed system is subject to the inservice inspection requirements of ASME Section XI for nuclear Class 3 piping. The system remains water-filled post LOCA; therefore, it is pressurized with water 1.10 P_a during the Type C local leak rate test per procedure HNP-1-3952, "A Primary Containment Periodic Type B and Type C leakage tests". The LLRT is performed in periods of 2 years or less in accordance with 10 CFR 50, Appendix J. Paragraph III.C.3. The leakage is excluded

GPC RESPONSE (Continued)

from the .60 L_a acceptance criteria. The leakage acceptance criteria is based upon maintaining a 30-day sealed water inventory. In addition, the closed system of drywell air coolers can be isolated on the inlet side by the service water inlet valve 1P41-F049 from the control room and the outlet side can be isolated by the outboard isolation valve 1P4-F050 from the control room.

The outboard isolation barrier is the service water isolation valve 1P41-F050 mentioned in the previous paragraph. Local leak rate tests are required in accordance with 10 CFR 50, Appendix J, Article III at least every 2 years per procedure HNP-1-3452, "Primary Containment Periodic Type B and Type C Leakage Tests", for this outboard barrier; however, the leakage is not included in the .60 L_a acceptance criteria. The leakage acceptance criteria is based upon maintaining a 30-day sealed water inventory.

1.h The principal instrument used to detect leakage in containment is timers triggered by the sump pumps. If a sump does not pump out in a preset time after the sump pump starts, the sump pump out-timer will initiate an alarm in the control room. If the sump fills up in less than the preset time after the sump pump trips on low level, then the sump fill-timer initiates an alarm in the control room.

All discharges from the drywell sumps are monitored by flow elements and recorded on an integrator as well as on a recorder. Radiation monitors are being installed on the discharge lines by DCR 79-473, and this work should be done during the next Unit 1 refueling outage. The equipment drain sump is equipped with a temperature monitor which allows for hot leakages to be detected.

1.i A sodium iodide crystal is used for detection of potential contamination in the HNP-1 plant service water effluent from the primary containment. The detector has Hi and Hi-Hi setpoints with a remote indication in the control room.

PLANT HATCH UNIT 1:

2. For plants with open cooling water systems inside containment take the following actions:

   a. Verify existence or provide redundant means of detecting and promptly alerting control room operators of a significant accumulation of water in containment (including the reactor vessel pit if present).

PLANT HATCH UNIT 1:

b. Verify existence or provide positive means for control room operators to determine flow from containment sump(s) used to collect and remove water from containment.

c. Verify or establish at least monthly surveillance procedures, with appropriate operating limitations, to assure plant operators have at least two methods of determining water level in each location where water may accumulate. The surveillance procedures shall assure that at least one method to remove water from each such location is available during power operation. In the event either the detection or removal systems become inoperable, it is recommended that continued power operation be limited to seven days and added surveillance measures be instituted.

d. Review leakage detection systems and procedures and provide or verify ability to promptly detect water leakage in containment, and to isolate the leaking components or system. Periodic containment entry to inspect for leakage should be considered.

e. Beginning within 10 days of the date of this bulletin, whenever the reactor is operating and until the measures described in (a) through (d) above are implemented, conduct interim surveillance measures. The measures shall include where practical (considering containment atmosphere and ALARA considerations) a periodic containment inspection or remote visual surveillance to check for water leakage. If containment entry is impractical during operation, perform a containment inspection for water leakage at the first plant shutdown for any reason subsequent to receipt of this bulletin.

f. Establish procedures to notify the NRC of any service water system leaks within containment via a special licensee event report (24 hours with written report in 14 days) as a degradation of a containment boundary.

GPC RESPONSE:

2.a All leaks inside of the drywell will be routed via the floor drains to the floor drain sumps. The 2 redundant level instruments in the sump trigger annunciators in the control room to warn of Hi and Hi-Hi sump level, thereby alerting the control room operators of a significant accumulation of water in primary containment.

2.b Flow monitoring capability is provided for both the floor drain and equipment drain sumps. The flow elements are of the nozzle type which feed a signal to both an integrator and a recorder.

GPC RESPONSE:

2.c The instruments used in the drywell sump pumps serve as a method of determining water level at one location where water may accumulate. If the sump pumps should fail to empty the sumps and they should overflow, then at a water level of approximately 3" on the drywell floor, water would drain into the torus and torus level indicators would inform operators of the water level in this location where water may accumulate.

Plant Hatch has HNP-1-1050 which is a surveillance check that is performed at every shift that checks both sump level and torus level.

2.d Based upon 1h and 2a, Hatch Unit 1 has 2 redundant level instruments in the sump that trigger annunciators in the control room as well as timers which aid in the calculation of leak rates. According to 1.f, we have sufficient means of isolating portions of the drywell cooling system in the event an excess leakage should be detected. Also, procedure HNP-1-1049 and HNP-1050 provide for excess leakage detection.

2.e GPC committed (per letter to NRC, 12/1/80) to perform an inspection of Unit 1 drywell at the first cold shutdown. That inspection was performed on 12/13/80 by a control room operator. No leakage was found.

2.f A revision is being made to HNP-1-425 to include any service water system leaks within containment.

PLANT HATCH UNIT 1:

3. For plants with closed cooling water systems inside containment provide a summary of experiences with cooling water system leakage into containment.

GPC RESPONSE:

Unit 1 does not have a closed cooling water system.

PLANT HATCH UNIT 2 - GPC RESPONSE:

1&2. Plant Hatch Unit 2 does not have an open cooling water system inside containment.

3. A review of LER's and maintenance requests revealed no history of system leakage of the closed cooling water system.

Georgia Power

If you need any further information or have any questions regarding the information supplied, please contact this office.

Very truly yours,

W. A. Widner

W. A. Widner

DLT/mb

Sworn to and subscribed before me this 5th day of January, 1981.

Mae H. Battle

Notary Public, Georgia, State at Large
My Commission Expires Sept. 20, 1983

Notary Public