ATTACHMENT 1

TECHNICAL SPECIFICATION CHANGES

REVISION 1

REACTOR COOLANT SYSTEM

OPERATIONAL LEAKAGE

LIMITING CONDITION FOR OPERATION

3.4.6.2 Reactor Coolant System leakage shall be limited to:

a. No PRESSURE BOUNDARY LEAKAGE,

b. 1 gpm UNIDENTIFIED LEAKAGE,

c. 1 gpm total reactor-to-secondary leakage through all steam generators not isolated from the Reactor Coolant System and 500 gallons per day through any one steam generator,

d. 10 gpm IDENTIFIED LEAKAGE from the Reactor Coolant System,

e. 8 gpm per RC pump CONTROLLED LEAKAGE at a Reactor Coolant System pressure of 2235 ± 20 psig, and

f. ~~1 gpm leakage at a Reactor Coolant System pressure of 2235 ± 20 psig from any Reactor Coolant System Pressure Isolation Valve specified in Table 3.4-1.*~~ SEE INSERT 1

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

a. With any PRESSURE BOUNDARY LEAKAGE, be in at least HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With any Reactor Coolant System leakage greater than any one of the above limits, excluding PRESSURE BOUNDARY LEAKAGE and leakage from Reactor Coolant System Pressure Isolation Valves, reduce the leakage rate to within limits within 4 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

c. With any Reactor Coolant System Pressure Isolation Valve leakage greater than the above limit, reduce the leakage rate to within limits within 4 hours, or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 12 hours with an RCS pressure of less than 600 psig.

*Test pressures less than 2235 psig but greater than 150 psig are allowed. Observed leakage shall be adjusted for the actual test pressure up to 2235 psig assuming the leakage to be directly proportional to pressure differential to the one-half power.

Insert 1 to T/S 3.4.6.2.f

f. The leakage from each Reactor Coola t System Pressure Isolation Valve specified in Table 3.4-1 shall be limited to 0.5 gpm per nominal inch of valve size up to a maximum of 5 gpm, at a Reactor Coolant System pressure of 2235 $\pm$ 20 psig. Valves which are 2 inch or smaller (nominal size) shall be limited to 1 gpm leakage.*

REVISION 1

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LIMITING CONDITION FOR OPERATION

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c. 1 gpm total reactor-to-secondary leakage through all steam generators not isolated from the Reactor Coolant System and 500 gallons per day through any one steam generator,

d. 10 gpm IDENTIFIED LEAKAGE from the Reactor Coolant System,

e. 8 gpm per RC pump CONTROLLED LEAKAGE at a Reactor Coolant System pressure of 2235 ± 20 psig, and

f. The leakage from each Reactor Coolant System Pressure Isolation Valve specified in Table 3.4-1 shall be limited to 0.5 gpm per nominal inch of valve size up to a maximum of 5 gpm, at a Reactor Coolant System pressure of 2235 ± 20 psig. Valves which are 2 inch or smaller (nominal size) shall be limited to 1 gpm leakage.*

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

a. With any PRESSURE BOUNDARY LEAKAGE, be in at least HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With any Reactor Coolant System leakage greater than any one of the above limits, excluding PRESSURE BOUNDARY LEAKAGE and leakage from Reactor Coolant System Pressure Isolation Valves, reduce the leakage rate to within limits within 4 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

c. With any Reactor Coolant System Pressure Isolation Valve leakage greater than the above limit, reduce the leakage rate to within limits within 4 hours, or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 12 hours with an RCS pressure of less than 600 psig.

*Test pressures less than 2235 psig but greater than 150 psig are allowed. Observed leakage shall be adjusted for the actual test pressure up to 2235 psig assuming the leakage to be directly proportional to pressure differential to the one-half power.

REVISION I

TABLE 3.4-1

REACTOR COOLANT SYSTEM PRESSURE ISOLATION VALVES

VALVE NUMBER	FUNCTION
BBV8948 A, B, C, D	SI/RHR/Accum Cold Leg Injection
BBV8949 A, B, C, D	SI/RHR Hot Leg Injection
BBV001, 022, 040, 059	BIT Cold Leg Injection
BBPV8702 A, B	RHR Normal Suction
EJV8841 A, B	RHR Hot Leg Recirc Ctmt ISO
EJHV8701 A, B	RHR Normal Suction
EMV001, 002, 003, 004	SI Hot Leg Inj Ctmt ISO
EM8815	BIT Inj Ctmt Isolation
EPV010, 020, 030, 040	SI Cold Leg Inj Ctmt ISO
EPV8818 A, B, C, D	RHR Cold Leg Inj Ctmt ISO
EPV8956 A, B, C, D	Accum Inj Isolation

REPLACE WITH "NEW" TABLE 3.4-1 (ATTACHED)

TABLE 3.4-1

REACTOR COOLANT SYSTEM PRESSURE ISOLATION VALVES

VALVE NUMBER	VALVE SIZE(in.)	FUNCTION	MAXIMUM ALLOWABLE LEAKAGE(gpm)
BB8948A	10	RCS Loop 1 Cold Leg SI Accu Chck	5.0
BB8948B	10	RCS Loop 2 Cold Leg SI Accu Chck	5.0
BB8948C	10	RCS Loop 3 Cold Leg SI Accu Chck	5.0
BB8948D	10	RCS Loop 4 Cold Leg SI Accu Chck	5.0
BB8949A	6	RCS Loop 1 Hot Leg SI/RHR Pump Chck	3.0
BB8949B	6	RCS Loop 2 Hot Leg SI/RHR Pump Chck	3.0
BB8949C	6	RCS Loop 3 Hot Leg SI/RHR Pump Chck	3.0
BB8949D	6	RCS Loop 4 Hot Leg SI/RHR Pump Chck	3.0
BBV0001	1.5	RCS Loop 1 Cold Leg SI/BIT Chck	1.0
BBV0022	1.5	RCS Loop 2 Cold Leg SI/BIT Chck	1.0
BBV0040	1.5	RCS Loop 3 Cold Leg SI/BIT Chck	1.0
BBV0059	1.5	RCS Loop 4 Cold Leg SI/BIT Chck	1.0
BBPV8702A	12	RCS Loop 1 Hot Leg to RHR Pumps ISO	5.0
BBPV8702B	12	RCS Loop 4 Hot Leg to RHR Pumps ISO	5.0
EJ8841A	6	RHR TRNS SIS Hot Leg Loop 2 Recirc	3.0
EJ8841B	6	RHR TRNS SIS Hot Leg Loop 3 Recirc	3.0
EJHV8701A	12	RHR Pump A Suction ISO	5.0
EJHV8701B	12	RHR Pump B Suction ISO	5.0
EMV0001	2	SI Pump A Disch to Hot Leg Loop 2 Chck	1.0
EMV0002	2	SI Pump A Disch to Hot Leg Loop 3 Chck	1.0
EMV0003	2	SI Pump B Disch to Hot Leg Loop 1 Chck	1.0
EMV0004	2	SI Pump B Disch to Hot Leg Loop 4 Chck	1.0
EM8815	3	BIT CVCS Out Check	1.5
EPV0010	2	SI Pumps to RCS Cold Leg Loop 1 Chck	1.0
EPV0020	2	SI Pumps to RCS Cold Leg Loop 2 Chck	1.0
EPV0030	2	SI Pumps to RCS Cold Leg Loop 3 Chck	1.0
EPV0040	2	SI Pumps to RCS Cold Leg Loop 4 Chck	1.0
EP8818A	6	RHR Pumps to RCS Cold Leg Loop 1 Chck	3.0
EP8818B	6	RHR Pumps to RCS Cold Leg Loop 2 Chck	3.0
EP8818C	6	RHR Pumps to RCS Cold Leg Loop 3 Chck	3.0
EP8818D	6	RHR Pumps to RCS Cold Leg Loop 4 Chck	3.0
EP8956A	10	SI Accu TK A Out Upstream Chck	5.0
EP8956B	10	SI Accu Tk B Out Upstream Chck	5.0
EP8956C	10	SI Accu TK C Out Upstream Chck	5.0
EP8956D	10	SI Accu TK D Out Upstream Chck	5.0

OPERATIONAL LEAKAGE (Continued)

The ~~1 gpm~~ leakage from any RCS pressure isolation valve is sufficiently low to ensure early detection of possible in-series check valve failure. It is apparent that when pressure isolation is provided by two in-series check valves and when failure of one valve in the pair can go undetected for a substantial length of time, verification of valve integrity is required. Since these valves are important in preventing overpressurization and rupture of the ECCS low pressure piping which could result in a LOCA that bypasses containment, these valves should be tested periodically to ensure low probability of gross failure.

The Surveillance Requirements for RCS pressure isolation valves provide added assurance of valve integrity thereby reducing the probability of gross valve failure and consequent intersystem LOCA. Leakage from the RCS pressure isolation valves is IDENTIFIED LEAKAGE and will be considered as a portion of the allowed limit.

3/4.4.7 CHEMISTRY

The limitations on Reactor Coolant System chemistry ensure that corrosion of the Reactor Coolant System is minimized and reduces the potential for Reactor Coolant System leakage or failure due to stress corrosion. Maintaining the chemistry within the Steady-State Limits provides adequate corrosion protection to ensure the structural integrity of the Reactor Coolant System over the life of the plant. The associated effects of exceeding the oxygen, chloride, and fluoride limits are time and temperature dependent. Corrosion studies show that operation may be continued with contaminant concentration levels in excess of the Steady-State Limits, up to the Transient Limits, for the specified limited time intervals without having a significant effect on the structural integrity of the Reactor Coolant System. The time interval permitting continued operation within the restrictions of the Transient Limits provides time for taking corrective actions to restore the contaminant concentrations to within the Steady-State Limits.

The Surveillance Requirements provide adequate assurance that concentrations in excess of the limits will be detected in sufficient time to take corrective action.

3/4.4.8 SPECIFIC ACTIVITY

The limitations on the specific activity of the reactor coolant ensure that the resulting 2-hour doses at the SITE BOUNDARY will not exceed an appropriately small fraction of 10 CFR Part 100 dose guideline values following a steam generator tube rupture accident in conjunction with an assumed steady state reactor-to-secondary steam generator leakage rate of 1 gpm. The values for the limits on specific activity represent limits based upon a parametric evaluation by the NRC of typical site locations. These values are conservative in that specific site parameters of the Callaway site, such as SITE BOUNDARY location and meteorological conditions, were not considered in this evaluation.

OPERATIONAL LEAKAGE (Continued)

The leakage from any RCS pressure isolation valve is sufficiently low to ensure early detection of possible in-series check valve failure. It is apparent that when pressure isolation is provided by two in-series check valves and when failure of one valve in the pair can go undetected for a substantial length of time, verification of valve integrity is required. Since these valves are important in preventing overpressurization and rupture of the ECCS low pressure piping which could result in a LOCA that bypasses containment, these valves should be tested periodically to ensure low probability of gross failure.

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The limitations on Reactor Coolant System chemistry ensure that corrosion of the Reactor Coolant System is minimized and reduces the potential for Reactor Coolant System leakage or failure due to stress corrosion. Maintaining the chemistry within the Steady-State Limits provides adequate corrosion protection to ensure the structural integrity of the Reactor Coolant System over the life of the plant. The associated effects of exceeding the oxygen, chloride, and fluoride limits are time and temperature dependent. Corrosion studies show that operation may be continued with contaminant concentration levels in excess of the Steady-State Limits, up to the Transient Limits, for the specified limited time intervals without having a significant effect on the structural integrity of the Reactor Coolant System. The time interval permitting continued operation within the restrictions of the Transient Limits provides time for taking corrective actions to restore the contaminant concentrations to within the Steady-State Limits.

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SAFETY EVALUATION

This amendment application requests a revision to Technical Specification LCO 3.4.6.2 to change the allowed leakage limit for reactor coolant system pressure isolation valves (RCS PIVs) and to correct valve numbers and descriptions as shown in Table 3.4-1. The RCS PIV LCO permits system operation in the presence of leakage through valves in amounts which do not compromise safety.

The RCS is isolated from other systems by valves. During plant life these interfaces can produce varying amounts of reactor coolant leakage through either normal operational wear or mechanical deterioration. The RCS PIV LCO permits system operation in the presence of leakage through these valves in amounts which do not compromise safety. PIV leakage limits apply to leakage rates for individual valves.

The basis for this LCO is the 1975 Reactor Safety Study (Ref. 1) which identified potential intersystem Loss Of Coolant Accidents (LOCAs) as a significant contributor to the risk of core melt. A subsequent study (Ref. 2) evaluated various PIV configurations to determine the probability of intersystem LOCAs. This study concluded that periodic leak testing of the PIVs can substantially reduce intersystem LOCA probability.

The proposed LCO leakage limit is based on permitting 0.5 gpm per nominal inch of valve size for valves larger than 2 inches with a maximum upper limit of 5 gpm (Ref. 4). Valves which are 2 inch or smaller (nominal size) shall be limited to 1 gpm leakage. The previous criterion of 1 gpm for all valve sizes was considered arbitrary and was not an indicator of imminent accelerated deterioration or potential valve failure. A study (Ref. 3) concluded allowable leak rates based on valve size was superior to a single allowable value. The single value imposes an unjustified penalty on the larger valves without providing information on potential valve degradation. In addition, enforcing the single value criteria resulted in higher personnel radiation exposures because larger valves must be repaired in-place.

Updating Table 3.4-1 to correct valve numbers and descriptions will make this table consistent with controlled drawings and the Callaway Master Equipment List. This is an editorial change only.

The proposed change to Technical Specification 3/4.4.6 (LCO 3.4.6.2) does not involve an unreviewed safety question because operation of Callaway Plant with this change would not:

1. Increase the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated in the safety analysis report. This change does not affect the operability requirements of the RCS PIVs or the ability of these valves to perform their intended safety functions. The change revises the acceptable leakage criteria of the PIVs to values based on valve size.

2. Create a possibility for an accident or malfunction of a different type than any previously evaluated in the safety analysis report. There is no new type of accident or malfunction being created and the method and manner of plant operation remains unchanged. The change results in individual valve leakage limits based on valve size with total identified leakage limited to 10 gpm as currently specified in LCO 3.4.6.2.

3. Reduce the margin of safety as defined in the basis for any technical specification. This is based on the fact that no plant design changes are involved and the current practices and procedures for monitoring valve leakage will not change.

Given the above discussions as well as those presented in the Significant Hazards Evaluation, the proposed change does not adversely affect or endanger the health or safety of the general public or involve a significant safety hazard.

References

1) U.S. Nuclear Regulatory Commission, "Reactor Safety Study-An Assessment of Accident Risks in U.S. Commercial Nuclear Power Plants", Appendix V, WASH-1400 (NUREG-75/014), October 1975.

2) U.S. NRC, "The probability of Intersystem LOCA: Impact Due to Leak Testing and Operational Changes", NUREG-0677, May 1980.

3) EG & G Report, EGG-NTAP-6175, "In Service Leak Testing of Primary Pressure Isolation Valves", R. A. Livingston, February 1983.

4) Safety Evaluation By the Office of Nuclear Reactor Regulation Related to Amendment No. 50 to Facility Operating License No. NPF-2 and Amendment No. 41 to Facility Operating License No. NPF-8, Alabama Power Company, Joseph M. Farley Plant, Units Nos. 1 and 2, Docket Nos. 50-348 and 50-364, October 15, 1984.

SIGNIFICANT HAZARDS EVALUATION

This amendment application requests a revision to Technical Specification 3/4.4.6 to change the allowed leakage limit for reactor coolant system pressure isolation valves to a value based on valve size.

The proposed change to Technical Specification 3/4.4.6 does not involve a significant hazards consideration because operation of Callaway Plant with this change would not:

1. Involve a significant increase in the probability or consequences of an accident previously evaluated. The proposed amendment still requires exactly the same actions to be taken when or if valve leakage limits are exceeded as is required by current Technical Specifications.

2. Create the possibility of a new or different kind of accident from any previously evaluated. There is no new type of accident or malfunction being created and the method and manner of plant operation remains unchanged. The change applies a leakage limit based on valve size. The total amount of identified reactor coolant system leakage remains at 10 gpm.

3. Involve a significant reduction in a margin of safety. The margin of safety remains unaffected since no design change is being made and total identified leakage limits remain the same as discussed in Technical Specification 3/4.4.6.

As discussed above, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated or create the possibility of a new or different kind of accident from any previously evaluated. This change does not result in a significant reduction in a margin of safety. Therefore, it has been determined that the proposed change does not involve a significant hazards consideration.