1901 Gratiot Street
Post Office Box 149
St. Louis, Missouri 63166
314-554-2650

UNION ELECTRIC

Donald F. Schnell
Senior Vice President
Nuclear

April 14, 1989

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Mail Station P1-137
Washington, D.C. 20555

Gentlemen: ULNRC-1978

DOCKET NUMBER 50-483
CALLAWAY PLANT
ATMOSPHERIC RELIEF VALVE TECHNICAL SPECIFICATIONS

References: 1) ULNRC-1238 dated January 14, 1986
2) NRC Letter from J. N. Hannon to D. F. Schnell dated March 21, 1989

Reference 1 submitted a proposed Technical Specification for secondary atmospheric relief valves in support of the steam generator tube rupture analysis performed for Callaway Plant. The analysis and Technical Specification were required by License Condition C(11) of the Callaway Operating License.

In Reference 2 the NRC provided an acceptable alternative to the originally proposed technical specification. This amendment request revises the originally proposed technical specification to be consistent with the alternative provided by the Staff. In addition the term used for these valves has been changed to Steam Generator Atmospheric Steam Dumps, to be consistent with the standard usage at Callaway. The attachments to this letter provide a revised Safety Evaluation, Significant Hazard Evaluation and proposed Technical Specification changes.

If you have any questions concerning this matter please contact us.

8904280060 890414
PDR ADOCK 05000483
P PNU

Very truly yours,

for Donald F. Schnell

DS/pkn
Attachments: 1) Safety Evaluation
2) Significant Hazards Evaluation
3) Proposed Technical Specification Changes

A001
1/1

STATE OF MISSOURI)
) S S
CITY OF ST. LOUIS)

Alan C. Passwater, of lawful age, being first duly sworn upon oath says that he is Manager, Licensing and Fuels (Nuclear) for Union Electric Company; that he has read the foregoing document and knows the content thereof; that he has executed the same for and on behalf of said company with full power and authority to do so; and that the facts therein stated are true and correct to the best of his knowledge, information and belief.

By Alan C. Passwater
Alan C. Passwater
Manager, Licensing and Fuels
Nuclear

SUBSCRIBED and sworn to before me this 14th day of April, 1989

Barbara J. Pfaff
BARBARA J. PFAFF
NOTARY PUBLIC, STATE OF MISSOURI
MY COMMISSION EXPIRES APRIL 22, 1993
ST. LOUIS COUNTY

cc: Gerald Charnoff, Esq.
Shaw, Pittman, Potts & Trowbridge
2300 N. Street, N.W.
Washington, D.C. 20037

Dr. J. O. Cermak
CFA, Inc.
4 Professional Drive (Suite 110)
Gaithersburg, MD 20879

R. C. Knop
Chief, Reactor Project Branch 1
U.S. Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Bruce Little
Callaway Resident Office
U.S. Nuclear Regulatory Commission
RR#1
Steedman, Missouri 65077

Tom Alexion (2)
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
1 White Flint, North, Mail Stop 13E21
11555 Rockville Pike
Rockville, MD 20852

Manager, Electric Department
Missouri Public Service Commission
P.O. Box 360
Jefferson City, MO 65102

Ron Kucera
Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

bcc: D. Shafer/A160.761
/QA Record (CA-758)
Nuclear Date
E210.01
DFS/Chrono
D. F. Schnell
J. E. Birk
J. V. Laux
M. A. Stiller
G. L. Randolph
R. J. Irwin
H. Wuertenbaecher
W. R. Campbell
A. C. Passwater
R. P. Wendling
D. E. Shafer (2)
D. J. Walker
O. Maynard (WCNOC)
N. P. Goel (Bechtel)
T. P. Sharkey
NSRB (Sandra Auston)
R. Hug
A140.01 (1039)

SAFETY EVALUATION

Introduction

Callaway License Condition C(11) states: "Prior to restart following the first refueling outage, UE shall submit for NRC review and approval an analysis which demonstrates that the steam generator single tube rupture (SGTR) analysis presented in the FSAR is the most severe case with respect to the release of fission products and calculated doses. Consistent with the analytical assumptions, the Licensee shall propose all necessary changes to Appendix A to this license".

The SGTR analysis has been completed and submitted to the NRC for review (References 1 through 8). This analysis takes credit for Steam Generator Atmospheric Steam Dump (ASD) operation for mitigating the consequences of a SGTR and states that a Technical Specification amendment request will be submitted concerning the operability of the ASD's in a SGTR event.

Proposed Technical Specification requirements were developed in order to support the SGTR analysis and submitted to the NRC in Reference 9. After review of the proposed Technical Specification, the NRC identified two areas which needed resolution in Reference 10. These areas are: (1) the time interval allowed for inoperability of one of the required three ASD's, and (2) operability of an ASD which has been isolated due to excessive seat leakage. In order to resolve these issues, the proposed Technical Specification changes have been modified to reflect what the NRC has indicated would be acceptable. The new proposed requirements state that three of the four steam generator ASD's shall be operable in Modes 1, 2, and 3. If only two ASD's are operable, this specification allows 7 days to return one of the two inoperable ASD's to operable status. If only one or no ASD is operable, this specification allows only 24 hours to return to at least two operable ASD's. If one or more of the required ASD's are inoperable due to excessive seat leakage with the associated block valve closed the specification allows 30 days to restore the required number of ASD's to operable status. An action statement is also provided which allows the plant to start up if the Limiting Condition of Operation (LCO) is not met. Finally, the proposed Technical Specification would not increase the surveillance requirements for the ASD's beyond those addressed in existing Specification 4.0.5.

In addition a change in wording is proposed for Surveillance Requirement 4.3.3.5.3 to provide consistent use of the term "atmospheric steam dump". In this surveillance the term "atmospheric dump valve" is changed to "atmospheric steam dump".

Evaluation

The purpose of the license amendment request is to incorporate Technical Specification Limiting Conditions for Operation (LCO) and surveillance requirements for the steam generator ASD's into the Callaway Operating License to assure the availability of mitigating equipment assumed in the SGTR analysis. The Technical Specification requirements constitute additional limitations on facility operations. No requirements on ASD operability had been included in the existing Callaway Technical Specifications because the ASD's have not previously been required in the mitigation of postulated accidents and transients.

The Callaway Plant design includes four ASD's, one ASD for each steam generator. The ASD's are safety-grade and have Class 1E electrical control circuits.

The operability of at least three of the four ASD's ensures that reactor decay heat can be dissipated to the atmosphere in the event of a SGTR coincident with a loss of offsite power and that the Reactor Coolant System (RCS), can be cooled down to the point of Residual Heat Removal System (RHR) operation. In the initial phases of a SGTR event, the ASD's are relied upon for achieving proper RCS subcooling prior to equalizing pressures between the RCS and the faulted steam generator. The proposed number of operable ASD's assures that subcooling can be achieved within assumed time constraints and in accordance with single failure assumptions used in the SGTR analysis.

For the RCS cooldown to RHR initiation, only one ASD is needed for the heat removal required. Three operable ASD's are adequate, assuming that one of the operable valves is on the faulted steam generator, and thus is not available for heat removal, and that one ASD fails to function in accordance with accident assumptions.

The proposed Technical Specifications are applicable in plant operational Modes 1, 2, and 3. Since the purpose of the ASD's is to provide for removal of reactor decay heat during the initial phases of the SGTR event and during cooldown to RHR initiation, and since the RHR system is available in Modes 4, 5, and 6, this Technical Specification is only applicable in Modes, 1, 2, and 3.

Each ASD is equipped with a manual block valve, located near the ASD in the auxiliary building, to provide a positive shutoff capability should an ASD develop leakage. Closure of the block valves of all ASD's because of excessive seat leakage does not endanger the reactor core because decay heat can be dissipated with the steam line safety valves. Also, consistent with SGTR analysis assumptions, a block valve can be opened manually in the auxiliary building and the ASD can be used to control release of steam to the atmosphere.

The restoration time periods provided in the proposed LCO Action statement are based on the low likelihood of having a SGTR event coincident with a loss of offsite power during the time period that one or more of the required ASD's is out of service. The allowed time period (7 days) for the case of one inoperable ASD is longer than the time period (24 hours) allowed when more than one of the required three ASD's is inoperable.

The surveillance requirements of the Callaway inservice valve testing program for the ASME Code valves are considered appropriate and sufficient for the ASD's. Therefore, the surveillance requirements in the proposed Technical Specification refer to the provisions of existing Specification 4.0.5. Testing of the ASD's at power, which involves stroking the valves, is performed in accordance with the NRC approved Callaway Inservice Testing Program. This precludes a plant transient associated with inadvertent failure of an ASD in the open position.

Conclusions

The proposed ASD Technical Specification constitutes new LCO and surveillance requirements which govern operability of existing equipment in the Callaway design. It was concluded that the proposed Technical Specifications would not adversely affect the conclusions in existing plant transient and accident analyses and that the proposed requirements provide acceptable operability limitations for ASD's consistent with the assumptions used in the SGTR analysis. Therefore, the level of plant safety described in the Callaway Final Safety Analysis Report is not adversely affected by the proposed amendment.

References

1. SLNRC 86-01, dated 1/8/86, Steam Generator Tube Rupture Analysis - SNUPPS

2. SLNRC 86-03, dated 2/11/86, Steam Generator Tube Rupture Analysis - SNUPPS

3. SLNRC 86-05, dated 4/1/86, Steam Generator Tube Rupture Analysis - SNUPPS

4. SLNRC 86-08, dated 9/4/86, Steam Generator Tube Rupture Analysis - SNUPPS

5. ULNRC-1424, dated 12/30/86, Steam Generator Tube Rupture Analysis

6. ULNRC-1442, dated 2/3/87, Steam Generator Tube Rupture Analysis

7. ULNRC-1518, dated 5/27/87, Steam Generator Tube Rupture Analysis

8. ULNRC-1849, dated 10/21/88, Steam Generator Tube Rupture - Operator Action Times

9. ULNRC-1238, dated 1/14/86, License Condition C(11) - Steam Generator Tube Rupture

10. NRC Letter from J. N. Hannon to D. F. Schnell dated 3/21/89.

SIGNIFICANT HAZARDS EVALUATION

The proposed Technical Specification for steam generator Atmospheric Steam Dumps (ASD's) incorporates new requirements into the Callaway Operating License. These requirements constitute additional limitations on facility operations to assure operability of the ASD's and to impose operating restrictions if less than the required number of ASD's is available.

The proposed specification does not involve a significant hazards consideration because operation of Callaway Plant in accordance with the proposed requirements would not:

1. Involve a significant increase in the probability or consequences of an accident previously evaluated. The ASD's are not relied upon for mitigation of accidents or transients, other than the Steam Generator Tube Rupture (SGTR) event, previously evaluated in the Callaway Final Safety Analysis Report (FSAR). The Limiting Conditions for Operation (LCO) do not alter the manner in which ASD operation was considered in previous accident and transient analysis. Surveillance testing of ASD's, which involves stroke testing, is performed in accordance with NRC approved Callaway Inservice Testing Program. Thus, a plant transient is precluded. To assure that the ASD's are available for mitigation of a postulated SGTR event, the proposed specification establishes surveillance requirements and restrictions on ASD operability consistent with assumptions used in the SGTR event analysis submitted to the NRC in accordance with Callaway License Condition C(11). Therefore, the proposed Technical Specification requirements would neither increase the probability of an accident nor increase the consequences of accidents previously evaluated.

2. Create the possibility of a new or different kind of accident from any previously evaluated. Establishing new LCO and surveillance requirements for the existing Callaway ASD's does not result in the possibility of new or different types of accidents.

3. Involve a significant reduction in a margin of safety. The proposed Technical Specification assures that the margin of safety established in the current SGTR analysis is maintained. As discussed in Items 1 and 2 above, the proposed LCO and surveillance requirements do not alter the margins to safety established in previous accident and transient analysis or in established surveillance test programs.

The NRC has established guidance concerning the determination of whether a significant hazards consideration exists by providing certain examples (51 FR 7751) of amendments not likely to involve a significant hazards consideration. The proposed ARV Technical Specification conforms to NRC example (ii) A change that constitutes an additional limitation, restriction or control not presently included in the Technical Specifications, e.g. a more stringent surveillance requirement.

Based on the above discussion, supplemented by the existing similarity of the proposed Technical Specification requirements to an NRC example of a change not likely to involve a significant hazards consideration, it has been concluded that the proposed ASD Technical Specification does not involve a significant hazards consideration.

Proposed Technical Specification Changes

page 3/4 3-49
proposed Spec 3/4.7.1.7
proposed Bases B/3.7.1.7