1901 Chouteau Avenue
Post Office Box 149
St. Louis, Missouri 63166
314-554-2650

UNION ELECTRIC

Donald F. Schnell
Senior Vice President
Nuclear

June 1, 1994

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

Gentlemen: ULNRC-3029

DOCKET NO. 50-483
CALLAWAY PLANT
ADDITIONAL INFORMATION CONCERNING THE
CALLAWAY PLANT INSERVICE INSPECTION PROGRAM PLAN

This letter transmits Relief Requests P, R, S, and T to the Callaway Plant Inservice Inspection Program Plan. NRC staff approval of this submittal is requested by December 1, 1994. Relief Requests P, R, and S are for ISI examinations that are less than 90% complete due to a permanent obstruction or due to the weld joint geometry and configuration. Relief Request T pertains to a visual pump or valve internal surface examination that could be performed, but only at extensive monetary cost and personnel exposure. Performance of these ISI examinations in strict compliance with ASME Section XI is considered to be impractical and would result in hardship and unusual difficulty without a compensating increase in the level of quality or safety.

If you have any questions concerning this letter, please contact us.

Very truly yours,

Donald F. Schnell

Donald F. Schnell

WEK/plr

Enclosure

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

Donald F. Schnell, of lawful age, being first duly sworn upon oath says that he is Senior Vice President-Nuclear and an officer of 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 Donald F. Schnell
Donald F. Schnell
Senior Vice President
Nuclear

SUBSCRIBED and sworn to before me this 1st day of June, 1994.

Barbara J. Pfaff

BARBARA J. PFAFF
NOTARY PUBLIC — STATE OF MISSOURI
MY COMMISSION EXPIRES APRIL 22, 1997
ST. LOUIS COUNTY

cc: T. A. Baxter, Esq.
Shaw, Pittman, Potts & Trowbridge
2300 N. Street, N.W.
Washington, D.C. 20037

M. H. Fletcher
CFA, Inc.
18225-A Flower Hill Way
Gaithersburg, MD 20879-5334

L. Robert Greger
Chief, Reactor Project Branch 1
U.S. Nuclear Regulatory Commission
Region III
801 Warrenville Road
Lisle, IL 60532-4351

Bruce Bartlett
Callaway Resident Office
U.S. Regulatory Commission
RR#1
Steedman, MO 65077

L. R. Wharton (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

CALLAWAY ISI
RELIEF REQUEST P-1

System: Reactor Coolant System (RCS)

Examination Category: B-J

Component Description: Reactor Coolant System 22° elbow-to-pipe weld on cold leg loops 1, 2, 3, and 4. Callaway weld identification numbers are 2-BB-01-S101-2, 2-BB-01-S201-2, 2-BB-01-S301-2, and 2-BB-01-S401-2 respectively.

Code Requirement: ASME Section XI, 1980 Edition through Winter 1981 Addenda, Table IWB-2500-1, Examination Category B-J, Item No. B9.11 requires 100% volumetric examination of the inner 1/3 thickness of weld metal plus the inner 1/3 of adjacent base metal for a distance of 1/4" beyond the edge of the weld crown. In addition, Article III, Paragraph III-4420 requires that the ultrasonic examination for reflectors parallel to the weld seam be performed using a sufficiently long examination beam path to provide coverage of the required examination volume in two beam path directions.

Areas for Relief: Partial relief is requested from the requirement to perform the ultrasonic examination in two beam path directions for reflectors parallel to the weld seam.

Basis for Relief: Scanning of the subject welds is limited by the outside diameter geometry of the 22° elbow on one side and by the cold leg radial whip restraint on the other side. The RCS piping and the 22° elbow material is centrifugally cast and statically cast stainless steel (SA-351 CF8A). Due to the high attenuative nature of this material, a refracted longitudinal sound wave is necessary to get a meaningful ultrasonic examination. A longitudinal sound wave cannot be extended to provide coverage in two beam path directions.

A total of 65% of the required volume was examined with a 45° refracted longitudinal sound wave in two beam path directions and 100% was examined in one beam path direction for reflectors parallel to the weld seam. In addition, 100% of the volume was examined with a 45° refracted longitudinal sound wave in two beam path directions for reflectors transverse to the weld seam.

Alternate Testing: The extent of the ultrasonic examination performed, the liquid penetrant examination of the weld cap and adjacent base metal surface area, the ASME Section XI VT-2 (visual) examination for leakage performed once every refueling outage, and the reactor coolant leakage detection system will verify weld integrity.

CALLAWAY ISI
RELIEF REQUEST P-2

System: Reactor Coolant System (RCS)

Examination Category: B-J

Component Description: Steam Generator inlet nozzle-to-50° elbow weld on Reactor Coolant System loops 1, 2, 3, and 4. Callaway weld identification numbers are 2-BB-01-F104, 2-BB-01-F204, 2-BB-01-F304, and 2-BB-01-F404 respectively.

Code Requirement: ASME Section XI, 1980 Edition through Winter 1981 Addenda, Table IWB-2500-1, Examination Category B-J, Item No. B9.11 requires 100% volumetric examination of the inner 1/3 thickness of weld metal plus the inner 1/3 of adjacent base metal for a distance of 1/4" beyond the edge of the weld crown. In addition, Article III, Paragraph III-4420 requires that the ultrasonic examination for reflectors parallel to the weld seam be performed using a sufficiently long examination beam path to provide coverage of the required examination volume in two beam path directions.

Areas for Relief: Relief is requested from the requirement to perform the ultrasonic examination in two beam path directions for reflectors parallel to the weld seam.

Basis for Relief: Scanning of the subject welds is limited to the 50° elbow side by a steep outside diameter taper on the steam generator inlet nozzle. The elbow material is statically cast stainless steel (SA-351 CF8A). Due to the high attenuative nature of this material, a refracted longitudinal sound wave is necessary to get a meaningful ultrasonic examination. A longitudinal sound wave cannot be extended to provide coverage in two beam path directions.

A total of 100% of the required volume was examined with a 45° refracted longitudinal sound wave in one beam path direction for reflectors parallel to the weld seam. In addition, 100% of the volume was examined with a 45° refracted longitudinal sound wave in two beam path directions for reflectors transverse to the weld seam.

Alternate Testing: The extent of the ultrasonic examination performed, the liquid penetrant examination of the weld cap and adjacent base metal surface area, the ASME Section XI VT-2 (visual) examination for leakage performed once every refueling outage, and the reactor coolant leakage detection system will verify weld integrity.

CALLAWAY ISI
RELIEF REQUEST P-3

System: Reactor Coolant System (RCS)

Examination Category: B-J

Component Description: Steam Generator outlet nozzle-to-40° elbow weld on Reactor Coolant System loops 1, 2, 3, and 4. Callaway weld identification numbers are 2-BB-01-F105, 2-BB-01-F205, 2-BB-01-F305, and 2-BB-01-F405 respectively.

Code Requirement: ASME Section XI, 1980 Edition through Winter 1981 Addenda, Table IWB-2500-1, Examination Category B-J, Item No. B9.11 requires 100% volumetric examination of the inner 1/3 thickness of weld metal plus the inner 1/3 of adjacent base metal for a distance of 1/4" beyond the edge of the weld crown. In addition, Article III, Paragraph III-4420 requires that the ultrasonic examination for reflectors parallel to the weld seam be performed using a sufficiently long examination beam path to provide coverage of the required examination volume in two beam path directions.

Areas for Relief: Relief is requested from the requirement to perform the ultrasonic examination in two beam path directions for reflectors parallel to the weld seam.

Basis for Relief: Scanning of the subject welds is limited to the 40° elbow side by a steep outside diameter taper on the steam generator outlet nozzle. The elbow material is statically cast stainless steel (SA-351 CF8A). Due to the high attenuative nature of this material, a refracted longitudinal sound wave is necessary to get a meaningful ultrasonic examination. A longitudinal sound wave cannot be extended to provide coverage in two beam path directions.

A total of 100% of the required volume was examined with a 45° refracted longitudinal sound wave in one beam path direction for reflectors parallel to the weld seam. In addition, 100% of the volume was examined with a 45° refracted longitudinal sound wave in two beam path directions for reflectors transverse to the weld seam.

Alternate Testing: The extent of the ultrasonic examination performed, the liquid penetrant examination of the weld cap and adjacent base metal surface area, the ASME Section XI VT-2 (visual) examination for leakage performed once every refueling outage, and the reactor coolant leakage detection system will verify weld integrity.

CALLAWAY ISI
RELIEF REQUEST P-4

System: Reactor Coolant System (RCS)

Examination Category: B-J

Component Description: Reactor Coolant System loop 4 hot leg-to-Pressurizer surge line branch connection weld. The Callaway weld identification number is 2-BB-01-S402-3.

Code Requirement: ASME Section XI, 1980 Edition through Winter 1981 Addenda, Table IWB-2500-1, Examination Category B-J, Item No. B9.11 requires 100% volumetric examination of the inner 1/3 thickness of weld metal plus the inner 1/3 of adjacent base metal for a distance of 1/4" beyond the edge of the weld crown. In addition, Article III, Paragraph III-4420 requires that the ultrasonic examination for reflectors parallel to the weld seam be performed using a sufficiently long examination beam path to provide coverage of the required examination volume in two beam path directions.

Areas for Relief: Relief is requested from the requirement to perform the ultrasonic examination in two beam path directions for reflectors parallel to the weld seam.

Basis for Relief: Weld 2-BB-01-S402-3 can be examined from the RCS pipe side only due to the pipe branch connection configuration. The RCS piping material is centrifugally cast stainless steel (SA-351 CF8A). Due to the high attenuative nature of this material, a refracted longitudinal sound wave is necessary to get a meaningful ultrasonic examination. A longitudinal sound wave cannot be extended to provide coverage in two beam path directions.

A total of 100% of the required examination volume was examined with a 45° refracted longitudinal sound wave in one beam path direction for reflectors parallel to the weld seam. In addition, 100% of the volume was examined with a 45° refracted longitudinal sound wave in two beam path directions for reflectors transverse to the weld seam.

Alternate Testing: The extent of the ultrasonic examination performed, the liquid penetrant examination of the weld cap and adjacent base metal surface area, the ASME Section XI VT-2 (visual) examination for leakage performed once every refueling outage, and the reactor coolant leakage detection system will verify weld integrity.

CALLAWAY ISI
RELIEF REQUEST R-1

System:	Residual Heat Removal (RHR) System
Examination Category:	C-A
Component Description:	RHR Heat Exchanger channel (i.e., shell section below the tube sheet)-to-tube sheet flange weld. This weld is a stainless steel double bevel groove weld with a wall thickness of approximately 0.88 inches. The Callaway weld identification number is 2-EEJ01A-SEAM-1-W.
Code Requirement:	ASME Section XI, 1980 Edition through Winter 1981 Addenda, Table IWC-2500-1, Examination Category C-A, Item No. C1.10 requires 100% volumetric examination of the weld plus 1/2" of adjacent base metal on each side of the weld crown. In addition, for vessel welds less than or equal to 2" wall thickness, ASME Section V, 1980 Edition through Winter 1981 Addenda, Article 5, T-546.2 requires this volume to be examined with a straight beam scan (0°), an angle beam scan for reflectors parallel to the weld seam, and an angle beam scan for reflectors transverse to the weld seam.
Areas for Relief:	Relief is requested for a composite percentage (i.e., average percentage of required volume not examined by each of the 3 required scans) of 37.1% of the required weld seam and base metal examination volume. Of the total required examination volume, 32.6% was not examined by the 0° scan, 17.8% was not examined by the angle beam scan for parallel reflectors, and 60.9% was not examined by the angle beam scan for transverse reflectors.
Basis for Relief:	Examination of weld 2-EEJ01A-SEAM-1-W was physically obstructed due to the tube sheet flange. In addition, each of the 3 scans was limited due to interference from 48-1 1/4" heavy hex nuts used for the tube sheet flange connection.

Basis for Relief: (Continued)

A total of 95% of the weld seam, not including the base material, was examined with the angle beam scan for reflectors parallel to the weld seam. The 5% weld seam volume not examined by any scan was located at the outside diameter weld toe closest to the tube sheet flange. Of the entire required examination volume (i.e., weld seam plus base material), 82.2% was examined by at least one of the 3 specified scans. The volume not examined consisted primarily of the tube sheet flange base material.

Alternate Testing:

The extent of the ultrasonic examination performed and the ASME Section XI VT-2 (visual) examination for leakage performed once every 40-month period will verify the weld integrity.

CALLAWAY ISI
RELIEF REQUEST R-2

System:	Reactor Coolant System
Examination Category:	B-F
Component Description:	Pressurizer surge nozzle-to-safe end weld. This is a 14" NPS stainless-to-carbon steel dissimilar metal joint with Inconel used as the weld filler material. The Callaway weld identification number is 2-TBB03-1-W.
Code Requirement:	ASME Section XI, 1980 Edition through Winter 1981 Addenda, Table IWB-2500-1, Examination Category B-F, Item No. B5.70 requires 100% volumetric examination of the inner 1/3 thickness of weld metal plus the inner 1/3 of adjacent base metal for a distance of 1/4" beyond the edge of the weld crown. In addition, Article III, Paragraph III-4420 requires that the ultrasonic examination for reflectors parallel to the weld seam be performed using a sufficiently long examination beam path to provide coverage of the required examination volume in two beam path directions.
Areas for Relief:	Partial relief is requested from the requirement to perform the ultrasonic examination in two beam path directions for reflectors parallel to the weld seam.
Basis for Relief:	The ultrasonic examination is physically obstructed by the pressurizer surge nozzle outside diameter taper on one side of the weld and by four integrally welded attachment lugs on the other side. A total of 44% of the required volume was not examined for reflectors parallel to the weld seam in two beam path directions. As noted above, the surge nozzle-to-safe end weld material is Inconel. Due to the high attenuative nature of Inconel, a 45° and 60° refracted longitudinal sound wave, in addition to a 45° shear wave, were used to get a meaningful ultrasonic examination. The examination was limited by the surge nozzle taper since a refracted longitudinal sound wave cannot be extended to provide coverage in two beam path directions and the shear wave, when extended to a sufficiently long beam path, does not have adequate penetration.

Basis for Relief: (Continued)

An average of 56% of the required volume was examined with both a 45° and 60° refracted longitudinal sound wave in two beam path directions and an average of 93% of the required volume was examined in one beam path direction for reflectors parallel to the weld seam. In addition, 100% of the required examination volume was examined with both a 45° and 60° refracted longitudinal sound wave in two beam path directions for reflectors transverse to the weld seam.

Alternate Testing:

The extent of the ultrasonic examination performed, the liquid penetrant examination of the weld cap and adjacent base metal surface area, the ASME Section XI VT-2 (visual) examination for leakage performed once every refueling outage, and the reactor coolant leakage detection system will verify weld integrity.

CALLAWAY ISI
RELIEF REQUEST S-1

System: Reactor Coolant System (RCS)

Examination Category: B-J

Component Description: Residual Heat Removal suction-to-RCS loop 1 cold leg branch connection weld and Safety Injection/Residual Heat Removal discharge-to-RCS loop 3 cold leg branch connection weld. Callaway weld identification numbers are 2-BB-01-S302-3 and 2-BB-01-S101-7 respectively.

Code Requirement: ASME Section XI, 1980 Edition through Winter 1981 Addenda, Table IWB-2500-1, Examination Category B-J, Item No. B9.11 requires 100% volumetric examination of the inner 1/3 thickness of weld metal plus the inner 1/3 of adjacent base metal for a distance of 1/4" beyond the edge of the weld crown. In addition, Article III, Paragraph III-4420 requires that the ultrasonic examination for reflectors parallel to the weld seam be performed using a sufficiently long examination beam path to provide coverage of the required examination volume in two beam path directions.

Areas for Relief: Relief is requested from the requirement to perform the ultrasonic examination in two beam path directions for reflectors parallel to the weld seam.

Basis for Relief: Weld 2-BB-01-S302-3 and 2-BB-01-S101-7 can be examined from the RCS pipe side only due to the nozzle-to-pipe branch configuration. The RCS piping material is SA-351 CF8A (centrifugally cast stainless steel). Due to the high attenuative nature of this material, a refracted longitudinal sound wave is necessary to get a meaningful ultrasonic examination. A longitudinal sound wave cannot be extended to provide coverage in two beam path directions.

A total of 100% of the required examination volume was examined with a 45° refracted longitudinal sound wave in one beam path direction for reflectors parallel to the weld seam. In addition, 100% of the volume was examined with a 45° refracted longitudinal sound wave in two beam path directions for reflectors transverse to the weld seam.

Alternate Testing: The extent of the ultrasonic examination performed, the liquid penetrant examination of the weld cap and adjacent base metal surface area, the ASME Section XI VT-2 (visual) examination for leakage performed once every refueling outage, and the reactor coolant leakage detection system will verify weld integrity.

CALLAWAY ISI
RELIEF REQUEST S-2

System: Pressurizer

Examination Category: B-D

Component Description: Pressurizer bottom head-to-surge nozzle weld. The pressurizer wall thickness in the area of this weld is 2.55 inches. The Callaway weld identification number is 2-TBB03-10A-W.

Code Requirement: ASME Section XI, 1980 Edition through Winter 1981 Addenda, Table IWB-2500-1, Examination Category B-D, Item No. B3.110 requires 100% volumetric examination of the weld plus 1/2 the wall thickness of adjacent base metal on each side of the weld crown. In addition, for vessel welds greater than 2" wall thickness, ASME Section V, 1980 Edition through Winter 1981 Addenda, Article 4, T-441.4 requires the volume to be examined with a straight beam scan (0°) for planar and laminar reflectors, two angle beam scans (i.e., 45° and 60° nominal) for reflectors parallel to the weld seam, and two angle beam scans for reflectors transverse to the weld seam.

Areas for Relief: Relief is requested for a composite percentage (i.e., average percentage of required volume not examined by each of the 5 required scans) of 31.5% of the required weld seam and base metal examination volume. Of the total required volume, 30.1% was not examined by the 0° scan, 30.1% was not examined by the angle beam (i.e., 45° and 60°) scans for transverse reflectors, and an average of 33.6% was not examined by the angle beam scans for parallel reflectors.

Basis for Relief: Examination of weld 2-TBB03-10A-W was physically limited due to transducer lift-off at the surge nozzle blend radius area and due to interference from the inner row of 20 pressurizer heater penetrations.

A total of 100% of the weld seam, not including the base material, was examined with the angle beam scan for transverse reflectors and 100% was examined with the 0° scan. Assuming no transducer swiveling and assuming zero beam spread, the scan of the weld seam for parallel reflectors was limited to 71.9% due to interference from the pressurizer heater penetrations. Actual percentages would be higher if calculations had accounted for transducer swiveling or beam spread. Of the entire required examination volume, 88.2% was examined by at least one of the 5 specified scans. The volume that was not examined consisted of the nozzle barrel base material only.

Basis for Relief: (Continued)

Radiation surveys completed in September of 1993 show general radiation levels in the area of this weld ranging from 0.5 to 1.5 rem per hour and surface contact readings ranging from 1.0 to 3.2 rem per hour. Attempts to perform alternate volumetric examination techniques would provide minimal increase in examination coverage and would result in significant radiation exposure without a commensurate increase in public health and safety.

Alternate Testing:

The extent of the ultrasonic examination performed, the ASME Section XI VT-2 (visual) examination for leakage performed once every refueling outage, and Callaway's reactor coolant leakage detection system will verify weld integrity.

CALLAWAY ISI
RELIEF REQUEST T-1

System: Reactor Coolant System (RCS)

Examination Category: B-L-2

Component Description: Reactor Coolant Pump 'A' casing internal pressure surface. The Callaway identification number is 2-PBB01A-SURF.

Code Requirement: ASME Section XI, 1980 Edition through Winter 1981 Addenda, Table IWB-2500-1, Examination Category B-L-2, Item No. B12.20 requires 100% VT-3 (visual) examination of the internal surfaces of one reactor coolant pump casing. The internal surface VT-3 examination is limited to one reactor coolant pump and is required once each 10-year inspection interval.

Areas for Relief: Allow deferral of the required internal surface VT-3 examination until the first reactor coolant pump is disassembled for maintenance, repair, or other inspection.

Basis for Relief: In order to satisfy Callaway's current commitment to ASME Section XI, Reactor Coolant Pump 'A' will need to be disassembled for the sole purpose of performing the internal surface VT-3 examination during Callaway's spring 1995 refueling outage. This is the last scheduled outage in Callaway's first 10-year inservice inspection interval. Currently no maintenance, repair, or other inspections are planned that would require disassembly of a reactor coolant pump.

Disassembly of a reactor coolant pump in order to perform the required internal surface VT-3 examination is a major maintenance evolution. Extensive health physics, planning, maintenance, and inspection man-hours will be required. The overall exposure in order to support and perform this VT-3 examination is estimated to be 17.06 man-rem. In addition, there is the possibility of damage to the pump during disassembly or re-assembly, further increasing the man-hours and personnel exposure.

Deferral of the pump casing internal surface VT-3 examination until a pump is disassembled for maintenance or repair has been allowed by ASME Section XI, starting with the 1988 Addenda. ASME recognizes that disassembly of a pump for the sole purpose of performing an internal surface VT-3 examination is impractical and does not provide a commensurate increase in public health and safety.

Basis for Relief: (Continued)

Callaway's reactor coolant pumps are a Westinghouse 93A-1 model. The pump casing is a single casting (i.e., no welds) fabricated of SA351 CF8 stainless steel. This material is not considered susceptible to inservice catastrophic failure. Westinghouse Electric Corporation has demonstrated by analysis that leak-before-break criteria is satisfied for Callaway's reactor coolant pump casings. A full report is contained in Westinghouse WCAP-12677, "Leak-Before-Break Analysis For The Primary Loop Pump Casings Of Westinghouse Type Pressurized Water Reactors."

The Nuclear Plant Reliability Data System (NPRDS) database was searched for records of reactor coolant pump service induced casing failures in the industry. The search encompassed documented records dating from 10-11-74 to 11-3-93. No history of a service induced pump casing failure was found.

Alternate Testing:

Perform the internal surface VT-3 examination when the first reactor coolant pump is disassembled for maintenance, repair, or other inspection. The internal surface VT-3 examination would be required only once per 10-year inspection interval and only if a reactor coolant pump was disassembled during that interval.

The ASME Section XI VT-2 (visual) examination for leakage and the reactor coolant leakage detection system will establish reactor coolant pump casing integrity until the first VT-3 examination is performed.

CALLAWAY ISI
RELIEF REQUEST T-2

System:	Residual Heat Removal (RHR) System		
Examination Category:	B-M-2		
Component Description:	Group 2*	RCS Hot Leg 1 and 4 to RHR Pump 'A' and 'B' Isolation Valves	BBPV8702A BBPV8702B
	Group 3*	RHR Pump 'A' and 'B' Suction Isolation Valves	EJHV8701A EJHV8701B

* Visual VT-3 examination requirements for valve groups not listed above (i.e., 1, 4, 5, and 6) are satisfied for Callaway's First 10-Year Inservice Inspection Interval.

Code Requirement: ASME Section XI, 1980 Edition through Winter 1981 Addenda, Table IWB-2500-1, Examination Category B-M-2, Item No. B12.50 requires 100% VT-3 (visual) examination of valve body internal surfaces of ASME Class 1 valves greater than 4" nominal pipe size. The internal surface VT-3 examination is limited to one valve within each group of valves that are of the same constructional design and perform similar functions in the system. Examination of at least one valve per group is required once each 10-year inspection interval.

Areas for Relief: Allow deferral of the required internal surface VT-3 examination until the first valve of Group 2 and 3 is disassembled for maintenance or repair.

Basis for Relief: In order to satisfy Callaway's current commitment to ASME Section XI, one valve in Group 2 and one valve in Group 3 will need to be disassembled for the sole purpose of performing the internal surface VT-3 examination during Callaway's spring 1995 refueling outage. This is the last scheduled outage in Callaway's first 10-year inspection interval. Currently no maintenance, repair, or other inspections are planned that would require disassembly of either Group 2 or 3 valves.

Disassembly of a Group 2 and 3 valve in order to perform the required interval surface VT-3 examination is a substantial maintenance evolution. Extensive health physics, planning, maintenance, and inspection man-hours will be required. The exposure in order to support and perform these VT-3 examinations is estimated to be 3.2 man-rem. In addition, there is the possibility of damage to the valves during disassembly or re-assembly, further increasing the man-hours and personnel exposure.

Basis for Relief: (Continued)

Deferral of valve internal surface VT-3 examinations until a valve is disassembled for maintenance or repair has been allowed by ASME Section XI, starting with the 1988 Addenda. ASME recognizes that disassembly of a valve for the sole purpose of performing an internal surface VT-3 examination is impractical and does not provide a commensurate increase in public health and safety.

The valve body material for both Group 2 and Group 3 valves is SA182 F316, a stainless steel forging. Under normal plant conditions this material is not considered susceptible to catastrophic failure. The Nuclear Plant Reliability Data System (NPRDS) database was searched for records of service induced valve body failures. The search encompassed documented records dating from 1-22-78 to 6-26-93 and included records for valves of like manufacture and for RHR system valves that perform a function similar to Group 2 and 3 Callaway valves. This search revealed no history or reports of valve body through wall failures or of valve body pressure boundary degradation, wear, or abnormal condition.

Internal surface VT-3 examinations on other Examination Category B-M-2 valves at Callaway (i.e., Groups 1, 4, 5 and 6), revealed no evidence of degradation, wear, or abnormal conditions. These valves were not disassembled solely to perform the VT-3 examination. The VT-3 examinations were performed concurrent with valve disassembly associated with other maintenance, repair, or other inspection activities.

Alternate Testing:

Perform the required internal surface VT-3 examination when the first Group 2 or 3 valve is disassembled for maintenance, repair, or other inspection. The internal surface VT-3 examination would only be required on one valve in Group 2 and one valve in Group 3 during each 10-year inspection interval and only if a valve in that group was disassembled during that interval.

The ASME Section XI VT-2 (visual) examination for leakage performed once every refueling outage and the reactor coolant leakage detection system will verify pressure boundary integrity of valves in Groups 2 and 3.