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SUBJECT: Submits rev to first 10-yr interval inservice insp program &
 forwards Relief Request B-9 for reactor vessel
 nozzle-to-extension piece welds in pipes & elbows located
 inside primary reactor shield cavity.

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Southern California Edison Company

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July 31, 1992

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NUCLEAR REGULATORY AFFAIRS

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U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D. C. 20555

Gentlemen:

Subject: First Ten-Year Interval Inservice Inspection Program
TAC Nos. 54148 and 54149
San Onofre Nuclear Generating Station
Units 2 and 3

- References:
1. October 12, 1990, Letter from L. E. Kokajko (NRC) to Harold B. Ray (SCE), Subject: Safety Evaluation report of the first Ten-Year Interval Inservice Inspection Program - San Onofre Nuclear Generating Station, Unit Nos. 2 and 3 (TAC Nos. 54148 and 54149)
 2. March 20, 1992, Letter from H. E. Morgan (SCE) to the Document Control Desk (NRC); Subject: First Ten-Year Interval Inservice Inspection Program, San Onofre Nuclear Generating Station, Units 2 and 3
 3. January 17, 1992, letter from Harold B. Ray (SCE) to John B. Martin, Regional Administrator, (NRC Region V), Subject: Reply to Notice of Violation, San Onofre Nuclear Generating Station, Unit 2

This letter provides a revision to the Inservice Inspection (ISI) program for San Onofre Units 2 and 3. In preparation for completing the requirements of the first 10-year interval, Southern California Edison (SCE) has completed a programmatic review of the ISI program. As part of this review, SCE identified 6 reactor vessel nozzle-to-extension piece welds in each Unit which are not covered by existing relief requests, but relief from the ASME Code is appropriate. Relief Request B-9 (Enclosure 1) proposes an alternate inspection method for these welds.

The NRC approved the ISI program for San Onofre Units 2 and 3 by reference 1. One relief request, B-7, was not approved by reference 1 and remained open for resolution. Reference 2 submitted the most recent revision to Relief Request B-7 and a new relief request, B-8. Relief Request B-7 requested use of a full volume examination in lieu of "1/3-volumetric-plus-surface" examination for 18 ASME Code Class 1 welds in the reactor coolant system piping for both Units 2 and 3. Relief Request B-8 is for relief from the schedule requirements of ASME Code Articles IWB-2400 and IWC-2400, "Inspection Schedule," for 1231 Class 1 and 2 welds that had previously been included in Relief Request B-7.

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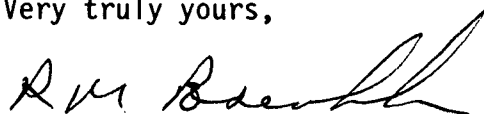
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In reference 3 SCE proposed corrective actions to ensure approved ISI programs would be used and controlled. One of the corrective actions was to issue the complete Unit 2 ISI and Unit 3 ISI programs with appropriate reviews and approvals. As a result of the programmatic review supporting this commitment, SCE identified six shop fabricated welds joining the reactor vessel nozzles to the extension pieces that are not covered by existing relief requests. These six additional circumferential welds are the reactor vessel nozzle-to-extension piece welds labeled "B-9" on the figure provided as Enclosure 2. These welds are in the vicinity of the welds included in Relief Request B-7 and labeled "B-7" on Enclosure 2. We believe these six welds were not identified in the most recent revision of Relief Request B-7 because our implementation program is split between reactor vessel inspections and piping inspections. Although these are piping welds, by having them grouped with reactor vessel welds, they were not previously identified as requiring a relief request.

Two of the 6 circumferential pressure retaining piping welds in Relief Request B-9 have received a 100 percent volumetric UT examination in lieu of a "1/3-volumetric-plus-surface" examination. These examinations were performed in accordance with the requirements of Section XI using equipment recommended in Regulatory Guide 1.150 "Ultrasonic Testing of Reactor Vessel Welds During Preservice and Inservice Examinations." Examinations were conducted from inside the piping using half-vee examination techniques as a minimum, applied in two directions parallel to the weld, and two directions perpendicular to the weld, except when access is limited by weld configuration or geometry.

Because this request will affect the critical path of the Unit 2 Cycle 7 refueling outage, your approval of Relief Request B-9 is requested by February 28, 1993 so we can revise our outage schedule accordingly. If you have any questions or need additional information related to this request, please let me know.

Very truly yours,



Enclosures

cc: J. B. Martin, Regional Administrator, NRC Region V
C. W. Caldwell, NRC Senior Resident Inspector, San Onofre Units 1, 2&3
M. B. Fields, NRC Project manager, San Onofre Units 2 and 3

RELIEF REQUEST NO. B-9

SYSTEM: Reactor Coolant System

COMPONENT/AREA: Reactor vessel nozzle-to-extension piece welds in pipes and elbows which are located inside the primary reactor shield cavity, alongside the unshielded reactor vessel.

6 Circumferential carbon steel welds for each Unit

EXAMINATION
CATEGORY: B-J

CLASS: 1

FUNCTION: To provide a pressure boundary to the Class 1 Reactor Coolant System

EXAMINATION
REQUIREMENT: 1/3-volumetric-plus-surface examination of applicable circumferential and longitudinal pressure retaining piping welds as per ASME Section XI Figure No. IWB-2500-8 for Class 1 components

BASIS FOR
RELIEF: Relief is requested from the above method of examination, referred to as "1/3 volumetric plus surface" examination.

1. A full-volumetric UT preservice examination was performed from the inside of the pipe. The results of a "1/3-volumetric-plus-surface" examination will not be directly comparable to the preservice examination. The preservice examination (PSE) for San Onofre Units 2 and 3 was performed in accordance with the requirements specified by the ASME Code, Section XI, 1974 Edition with Addenda through the Summer, 1975; the Code edition approved by 10CFR50.55a at the time the PSE was performed. This Code required the examination of 100% of the volume of the weld and heat affected zone for longitudinal and circumferential piping welds in Class 1 systems larger than 1 inch in nominal pipe size. Ultrasonic (UT) examination techniques were used to satisfy these requirements.
2. Access to the affected welds is by either removing the refueling cavity seal ring and entering the area from above, or crawling alongside the primary coolant piping through the penetrations in the primary shield

Units 2 and 3, July 31, 1992

wall. Although these welds did receive surface examinations during construction, the high humidity environment in which they are located is expected to have resulted in surface oxidation which would require removal prior to performing a successful surface examination.

3. The total effort to perform all required surface examinations without Relief Request B-9 is estimated to increase radiation exposure received in the performance of the required examinations. This increase of person-rem per outage for these examinations is not consistent with ALARA objectives. These welds are located in a high radiation area next to the reactor vessel, with dose rates ranging from 100 mrem-hour to 8 rem/hour at some hot spots, with an average dose rate in the area of examination being approximately 250 mrem/hour.

Approximately 32 person-rem of exposure would be saved if Relief Request B-9 is approved because surface inspections of these 6 nozzle-to-extension piece welds would not be performed.

Access to the area and the scaffolding and surface preparation involved with inspecting the extension piece-to-pipe welds covered by Relief Request B-7 would require expending approximately the same dose. Due to the proximity of the B-7 welds to the B-9 welds, relief from surface examination of one group of welds will not yield appreciable dose savings without relief from the surface exam requirements for the other group of welds. Therefore, if Relief Request B-7 is not approved, Relief Request B-9 represents no significant dose savings and would be withdrawn.

4. A full volumetric UT examination from the inside of the pipe was performed during the Cycle 3 refueling outage, for both Units 2 and 3, on the two hot leg circumferential welds. This examination was performed using the guidance in Regulatory Guide 1.150 "Ultrasonic Testing of Reactor Vessel Welds During Preservice and Inservice Examinations." The remaining 4 welds in the cold legs of each Unit will be examined in this manner during the respective Cycle 7 refueling outage. The results of these completed examinations support the viability of full-volumetric examinations in lieu of 1/3-volumetric-plus-surface examinations. Specifically, the radiographic punch marks, which are

no more than 3/64-inch (0.047 inches) deep, were detected. These marks are less than the minimum Code allowed flaw depth (about 0.2 inches).

**ALTERNATE
EXAMINATION:**

All 6 circumferential pressure retaining piping welds on each Unit will have received a 100 percent volumetric UT examination in lieu of a "1/3-volumetric-plus-surface" examination. These examinations will be performed using the guidance of Regulatory Guide 1.150 "Ultrasonic Testing of Reactor Vessel Welds During Preservice and Inservice Examinations." Examinations shall be conducted from inside the piping using half-vee examination techniques as a minimum, applied in two directions parallel to the weld, and two directions perpendicular to the weld, except when access is limited by weld configuration or geometry.

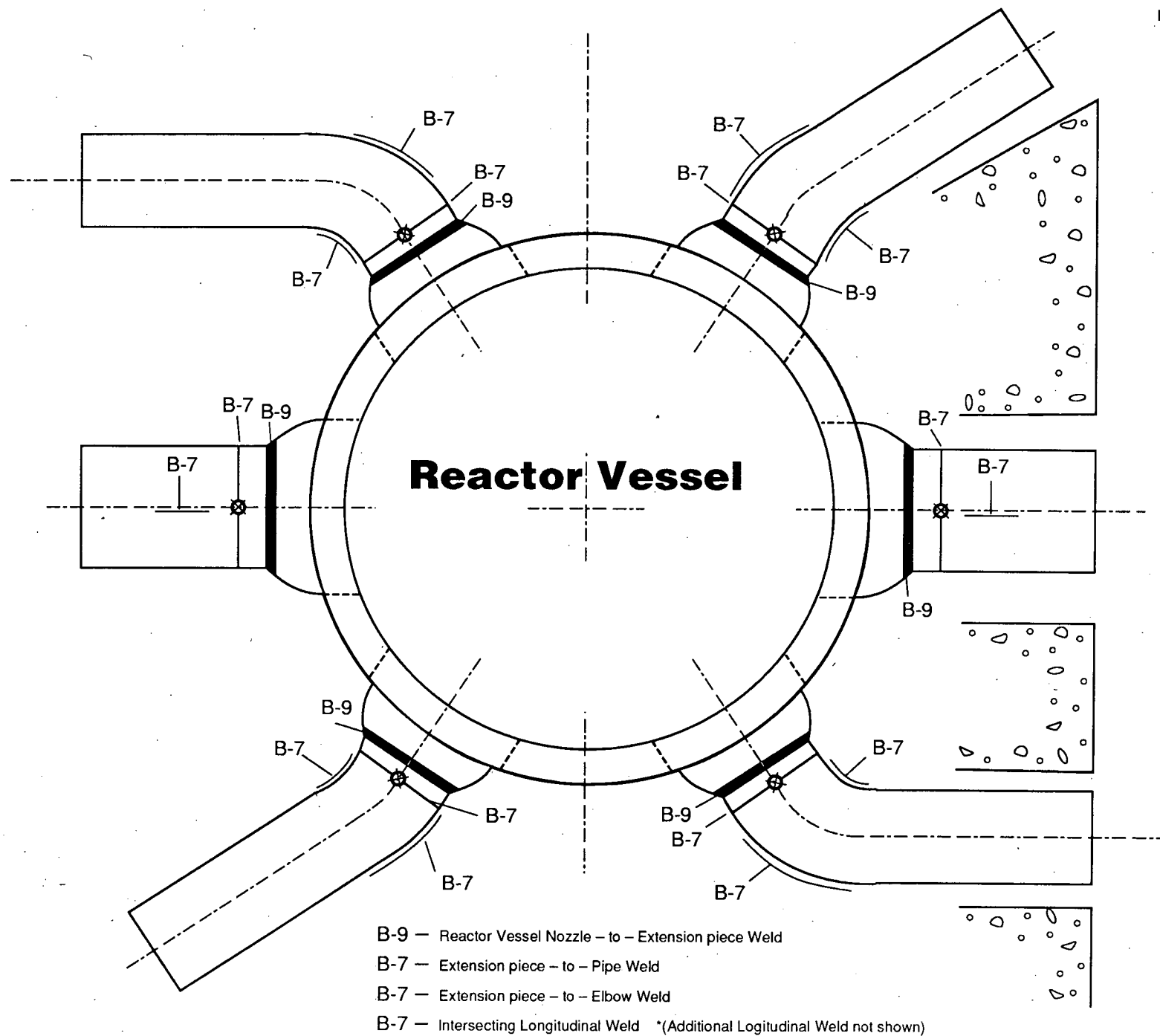


Figure 1