Southern California Edison Company

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June 27, 1990

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

Gentlemen:

Subject: Docket No. 50-362
Alloy 690 Steam Generator Tube Plug
San Onofre Nuclear Generating Station
Unit 3

Pursuant to Title 10, Code of Federal Regulations, Paragraph 50.55a(a)(3), this letter requests approval of the use of plugs fabricated of nickel-chromium-iron UNS N-06690 material (Alloy 690) to plug tubes in the steam generators of San Onofre Unit 3.

This material is the subject of Code Case N-474-1 of the ASME Boiler and Pressure Vessel Code which has been approved by the Code Committee but not yet published. This Code Case authorizes the use of nickel-chromium-iron UNS N-06690 material (Alloy 690) in additional forms in the construction of Section III, Division I, Class 1 components. The material is specified in ASME Code, Section II material specifications SB-163, SB-166, SB-167, and SB-168. Previously, Alloy 690 in tubing form (SB-163) has been authorized for construction of Class 1 components. Code Case N-474-1 was approved November 30, 1989.

The change to the use of Alloy 690 for tube plugs has been made as a result of material corrosion considerations. The NRC staff endorsed the use of Alloy 690 for fabrication of mechanical plugs for steam generator tubes in NRC Bulletin No. 89-01, "Failure of Westinghouse Steam Generator Tube Mechanical Plugs," dated May 15, 1989. Additionally, this material is used in the fabrication of plugs which may be welded into steam generator tubes.

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Alloy 690 has similar mechanical properties to the Alloy 600 material previously used for tube plugs. The Design Stress Intensity stipulated by the Code Case and used in the design and qualification of the tube plugs is the same as for Alloy 600 material of the same form.

The immediate need for the approval to use Alloy 690 plugs is associated with San Onofre Unit 3. On June 24, Southern California Edison (SCE) identified a leaking welded tube plug on the cold leg side of Steam Generator E089. An additional leaking welded plug was identified on June 27. These plugs are scheduled to be replaced with new welded plugs on June 27, 1990. Because of the improved material corrosion properties of Alloy 690, and its immediate availability for installation, this material will be used for these plugs.

In order to support the continued startup schedule of Unit 3, your timely consideration of this request would be appreciated. Unit 3 is presently scheduled to enter Mode 4 on July 5. Because of the short time available to act on this request, SCE will be requesting by separate letter to Region V, a Temporary Waiver of Compliance to permit entry into Modes 4 and 3 for the purpose of performing surveillances and post-outage testing.

If you have any questions on this request or require additional information, please call me.

Very truly yours,

R M Bernhardt

cc: J. B. Martin, Regional Administrator, NRC Region V
C. W. Caldwell, NRC Senior Resident Inspector, San Onofre Units 2 and 3
L. E. Kokajko, NRC Project Manager, San Onofre Units 2 and 3
H. F. Conrad, Office of Nuclear Reactor Regulations, NRC