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U.S. Nuclear Regulatory Commission  
Office of Inspection and Enforcement  
Region V  
1450 Maria Lane, Suite 210  
Walnut Creek, California 94596-5368

Attention: Mr. J. B. Martin

Dear Sir:

Subject: Docket No. 50-206  
IE Bulletin No. 82-04  
San Onofre Nuclear Generating Station  
Unit 1

This letter transmits our response to the subject bulletin. Responses are provided in accordance with those required for plants in operation. As required by the bulletin, inspection of non-installed Bunker Ramo penetrations was performed and a review of operational and maintenance records was conducted. Based on the results of the inspection and review, inspection of installed Bunker Ramo penetrations will not be performed.

If you have any questions regarding this information, please let me know.

Subscribed on this 3rd day of March, 1983.

Respectfully submitted,

SOUTHERN CALIFORNIA EDISON COMPANY

By:

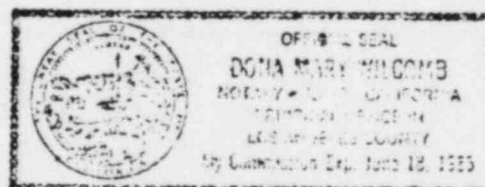
J. G. Haynes  
J. G. Haynes  
Manager of Nuclear Operations

Subscribed and sworn to before me this  
3rd day of March.

Dona Mary Wilcomb  
Notary Public in and for the County of  
Los Angeles, State of California

My Commission Expires: June 8, 1985

ACL:7295  
Enclosure



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Mr. J. B. Martin

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March 3, 1983

bcc: G. D. Cotton (SDG&E)  
R. L. Erickson (SDG&E)  
D. R. Pigott (OH&S)  
K. P. Baskin  
D. F. Pilmer  
H. B. Ray  
H. E. Morgan  
B. Katz  
W. G. Zintl  
W. L. Nelson  
H. Markosian  
S. P. Smith  
R. W. Krieger  
A. C. Llorens  
CDM Files  
NE Files

NRC			
Correspondence			
Date: 3/1/83			
	ORGAN	Initials	Date
	Mgr. N.O.		
	Mgr. N.E.S.&L.		
	Mgr. Lic.		
	Supv. Lic. 2 & 3		
x	Supv. Lic. 1	RWK	3/2/83
x	Supv. O.S.	MSJ	3/2/83 P&S 3-2-83
	Engr.		
	Proj. Mgr.		
x	Proj. Engr.	KZ	3/1/83
x	Law	JSJ	3/1/83
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	Env. Affairs		
x	Author	ACT	3/1/83
/	Tech. Orgs.	/	/
x	ELECTRICAL	MSJ	3-1-83

Reponse to IE Bulletin No. 82-04  
Deficiencies In Primary Containment  
Electrical Penetration Assemblies  
San Onofre Nuclear Generating Station, Unit 1

IE Bulletin 82-04 requires that licensees submit a written report providing information on Bunker Ramo penetrations installed in nuclear power facilities or stored as spares. During the 1976/1977 refueling outage eleven Bunker Ramo (Amphenol) penetrations were delivered to San Onofre Unit 1. Two power and control penetrations were installed and utilized for safety-related equipment including the Residual Heat Removal Pumps. The other nine are instrumentation penetrations, one of which was installed for use in the non-safety related containment integrated leak rate system. Responses provided below are for a plant in operation.

1. Plants Under Construction and in Operation

If Bunker Ramo electrical penetrations having module assemblies which utilize the hard epoxy module design are not yet installed in safety-related systems at your facility (plants under construction) or are non-installed spare units (operating plants), the following actions are requested:

- a. Inspect all supplier-provided electrical penetration terminal boxes and verify that the conductor terminations are satisfactory (correct lug sizes, proper crimps, and no loose connections).
- b. Inspect all electrical penetration conductors as they enter and exit penetration modules and verify the integrity of the insulation around the conductors. It may be necessary to remove the penetration modules from the assembly to perform this inspection, and removal will be necessary to conduct the examination discussed in Item c below.
- c. Conduct detailed examination of all supplier-provided in-line butt splices having a wire size of #2 AWG and smaller, and ascertain acceptability of these connections.

Response

- 1a. Terminal boxes were not provided with the non-installed spare units.
- 1b. The installed Bunker Ramo penetrations for safety-related circuits are for power and control while the spare penetrations are for instrumentation circuits. However, a comparison of the instruction manual for the power and control penetrations and the instruction manual for instrumentation penetrations show that module construction is similar for both the non-installed spare instrumentation penetrations and the installed power and control penetrations. Therefore, due to similarities in construction an

inspection was made of the spare instrumentation penetrations. Drawings of the penetrations are included in both manuals and show in detail their internal construction. Each pigtail conductor is crimped onto a contact within the assembly. Epoxy is then molded around the conductors and contacts. The contacts and crimps cannot be visually inspected.

The non-installed spare penetrations utilize 2/C #16 AWG shielded Chromel/Alumel and Copper/Constantan stranded thermocouple wire similar to the installed non-safety related instrumentation penetration. Factory assembly included stripping back the outer jacket several inches from the hard epoxy and terminating with a small piece of heat shrink tubing.

An inspection of two of the spare instrumentation penetrations was conducted February 15, 1983 at the San Onofre site. The inspection verified that each conductor continued into the epoxy with no evidence of any splices. The insulation on every conductor was intact with no evidence of any cracking or deterioration. The epoxy had no cracks and all conductors were tightly sealed as they entered the epoxy. No deficiencies were found.

1c. See the discussion in 1b. above.

2. Plants Under Construction

Not applicable.

3. Plants in Operation

If Bunker Ramo electrical penetration assemblies utilizing the hard epoxy module design are installed in safety-related systems at your facility, you are requested to review past operational and related maintenance records of these electrical penetration units for circuit functionality problems similar to those discussed in this bulletin. If such problems have occurred, or if the inspection of spare assemblies in accordance with Item 1 have identified deficiencies, then the following actions are requested:

a. Provide a basis for continued plant operation if problems as discussed in this bulletin are identified.

b. Develop a plan for inspection of the installed assemblies. This plan should address the types of problems identified by past operational history and/or the inspection of non-installed spares. The plan should identify the wire sizes to be examined.

(1) If a problems were only identified in accessible portions of the assembly then the sample may be restricted to that portion.

- (2) If problems included inaccessible portions, then the sample shall include inaccessible portions of the assembly. This will require removal of the module from the assembly.

Response

The maintenance files were reviewed and no indications were found that any problems have occurred on the two power and control penetrations. Maintenance and operational personnel working at the site during installation could recall no problems with the system due to the penetrations. From all information available, the installations are operating satisfactorily.

If discontinuities or other problems had been identified in the operational and maintenance records, Section 3 required a visual inspection of installed assemblies and removal of module samples for inspection of butt splices per NRC approved schedule. In addition, if problems had been found, a basis for continued plant operation was requested (assuming the unit was currently on line or returning on line from an outage). In that review of Station records yielded no operational problems, the additional inspections, module sampling and basis for continued operation are not required.

4. Not applicable.

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