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ELECTRIC ENGINEERING  
DEPARTMENT

April 22, 1981

Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

ATTN: Mr. Robert A. Clark, Chief  
Operating Reactors Branch #3  
Division of Licensing



Subject: Calvert Cliffs Nuclear Power Plant  
Unit Nos. 1 & 2, Docket Nos. 50-317 & 50-318  
Containment Sump and Insulation Information

References: (a) NRC letter dated 11/4/80 from Clark to  
Lundvall, TAP A-43  
(b) BG&E letter dated 3/3/81 from Olson to  
Clark, same subject.

Gentlemen:

Reference (a) requested certain information concerning the containment sump design and the insulation used inside containment at Calvert Cliffs. Reference (b) provided the requested information with the exception of question 2 (d), which asked for the location and quantity of insulation in containment. That information is provided in the attached Table 1.

For your convenience, the following is a summary of our reference (b) response to questions 2 (a), (b), and (c) concerning insulation type, brand and method of attachment. This information is based on an investigation of Unit No. 1 documents and is believed to be applicable to both Units.

The insulation in containment (both units) was either manufactured by Transco, Inc. or by Forty-Eight Insulations, Inc. and then supplied to Transco, Inc.

The insulation used was either reflective or mineral wool. Reflective panels consist generally of a sheet of 22 gauge stainless steel (S.S.), 9 or 10 sheets of .002" S.S. foil and a sheet of 24 Ga. S.S. End closures are 26 Ga. S.S. Most panels are reinforced using a stainless steel nail fixed through the section.

Mineral wool panels generally consist of a 22 Ga. S.S. sheet, a thickness of 8 pound density E.T.R. mineral wool, and a 24 Ga. S.S. sheet. End closures again are 26 Ga. S.S. Deviations from these compositions are listed in Table 1.

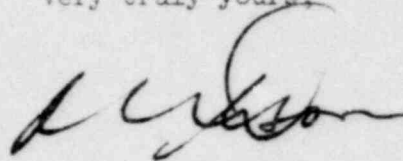
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Insulation panels or sections are attached to equipment insulation support frames or angles and to piping using combinations of C-clips, Z-clips, interlapping panels, and quick-release buckles. Some reactor vessel insulation is permanently attached using self-tapping screws.

We would be interested in seeing the results of the tests for which this information was requested when they are available.

Very truly yours,



R. C. L. Olson  
Principal Engineer  
Nuclear Licensing & Analysis Unit

cc: J. A. Biddison, Esquire  
G. F. Trowbridge, Esquire  
Mr. E. L. Conner, Jr.-NRC  
Mr. J. C. Ventura - Bechtel  
Mr. R. E. Architzel - NRC

TABLE 1  
Insulated Equipment in Containment

<u>Location</u>	<u>Type</u>	<u>Quantity</u>
Reactor Coolant Pumps	Mineral Wool	265 sq. ft. of 3½" (each)
Steam Generators	Reflective Mineral Wool	535 sq. ft. of 10 ply (3½") (each) 1460 sq. ft. of 3½" (each)
Pressurizer Surge Line	Reflective	50 linear feet of 10 ply (3½") on 12 3/4" OD pipe (All 24 Ga. sheeting)
Coolant Loop	Reflective	Hot Legs (Total) 23 linear feet of 10 ply (3½") on 49 3/4" OD pipe Cold Legs (Total) 45 linear feet of 10 ply (3½") on 35½" OD pipe
Regenerative Heat Exchanger	Mineral Wool	135 sq. ft. of 3½"
Pressurizer	Reflective Mineral Wool	265 sq. ft. of 10 ply (3½") 720 sq. ft. of 3½"
Reactor Vessel	Reflective	635 sq. ft. of 9 ply (3") (some 2" 8 ply near neutron detectors) Fixed insulation held by self tapping U.S. screws
Reactor Dome	Mineral Wool	330 sq. ft. of 3½" (18 and 22 Ga. sheeting)
Reactor Cavity	Reflective	1420 sq. ft. of 9 ply (3")
Letdown Line	Mineral Wool	48 linear ft. of 2½" on 2" line
Safety Injection	Mineral Wool	170 linear ft. of 3½" on 12" line 300 linear ft. of 3½" on 6" line

**POOR ORIGINAL**

<u>Location</u>	<u>Type</u>	<u>Quantity</u>
Charging	Mineral Wool	390 linear ft. of 2½" on 2" line
RCS Auxiliary Piping	Mineral Wool	345 linear ft. of 2" on 3/4" line
RCS Vents and Drains	Mineral Wool	40 linear ft. of 2½" on 2" line
Pressurizer	Mineral Wool	20 linear ft. of 2" on 3/4" line
<del>Safety and</del>		<del>10 linear ft. of 3" on 4" line</del>
Relief Valves (Upstream)		
Pressurizer Spray	Mineral Wool	180 linear ft. of 2½" on 3" line 2 linear ft. of 2" on 3/4" line 10 linear ft. of 3" on 4" line
Reactor Coolant Pump Bleed	Mineral Wool	20 linear ft. of 2" on 3/4" line
Shutdown Cooling	Mineral Wool	5 linear ft. of 3½" on 12" line
RCS Pressurizer End	Mineral Wool	2 linear ft. of 2" on 3/4" line

POOR ORIGINAL