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 50-323 Diablo Canyon Nuclear Power Plant, Unit 2, Pacific Gas
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 KNIGHTON, G.W. Licensing Branch 3

DOCKET #
 05000275
05000323

SUBJECT: Forwards response to questions re Item 100 of SSER 21 & 22
 pertaining to QC for painting inside containment. Paint in
 containment qualified to ANSI N101.2 or retained by
 insulation.

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J. O. SCHUYLER
VICE PRESIDENT
NUCLEAR POWER GENERATION

May 9, 1984

PGandE Letter No.: DCL-84-177

Mr. George W. Knighton, Chief
Licensing Branch No. 3
Division of Licensing
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington D.C. 20555

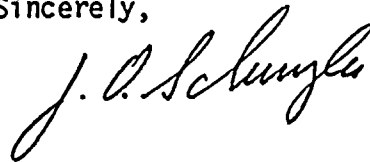
Re: Docket No. 50-275, OL-DPR-76
Docket No. 50-323
Diablo Canyon Units 1 and 2
SSER 21 and 22, Item 100 - Painting Inside Containmentment

Dear Mr. Knighton:

Enclosed is PGandE's response to the NRC Staff's questions concerning item 100 of Supplements 21 and 22 to the Safety Evaluation Report pertaining to quality control for painting inside containment.

Kindly acknowledge receipt of this material on the enclosed copy of this letter and return it in the enclosed addressed envelope.

Sincerely,



Enclosure

cc: J. B. Martin
H. E. Schierling
Service List

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PDR ADOCK 05000275
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ENCLOSURE

PAINTING INSIDE CONTAINMENT

Diablo Canyon Power Plant (DCPP) Units 1 and 2 Safety Evaluation Report, Supplements 21 and 22, item 100, addressed the DCPP quality control program for painting inside containment. During the NRC Staff review of this item, information was requested concerning the testing of Carboline paints in accordance with ANSI N101.2. PGandE letter DCL-84-029 dated January 24, 1984 provided certification of Carboline paints to ANSI N101.2 criteria. On April 16, 1984, the NRC Staff requested additional information concerning the qualification of painting at DCPP Units 1 and 2.

This enclosure provides PGandE's response to four specific questions asked by the NRC Staff.

NRC Question No. 1

PGandE letter dated January 24, 1984, enclosed information certifying that Carbo Zinc 11, Phenoline 305, Carboline 191 HB, and Phenoline 302 have been tested in accordance with and meet the requirements of ANSI N101.2-1972. Have the other containment paints been tested in accordance with and meet the requirements of ANSI N101.2? These are: High Heat Aluminum TT-P-28D, Dimetcote 6, Deoxaluminite, Mobil Zinc #7, Mobil 13R-711, Chem Fast, Amercoat-66 and Carboline 4674.

Response

The following paints have been tested in accordance with and meet the requirements of ANSI N101.2: Dimetcote 6, Mobil Zinc #7, and Amercoat-66.

Chem Fast and Phenoline 305 coatings were not used on instrument panels. Paints used by the manufacturer were Sherwin Williams Tile Clad II, Metal Primer B69N70, Dover White B69W70 (Interior) and Gray ANSI61 (Exterior). This paint system has been tested in accordance with and meets the requirements of ANSI N101.2.

The Deoxaluminite was used only for pipe weld preparation protection. This paint is removed during installation and, therefore, no longer exists.

Mobil 13R-711 was used on piping which is insulated. The use of Harris High Heat Aluminum TT-P-28D paint on the steam generators and pressurizer is currently being verified by the equipment manufacturer. This paint was not applied to the reactor vessel. Gilman Aluminum High Temperature Resistance paint was applied by the equipment manufacturer to the reactor vessel. However, the reactor vessel, steam generators and pressurizer are also insulated. The piping and equipment insulation would capture and retain any of the paints if they should come off the surface and prevent the paint from reaching and blocking the sump drains or interrupting the water flow in the containment spray system.



Carboline 4674 paint was not used inside the DCPD containment.

FSAR Table 6.2-28 will be updated to delete the Deoxaluminite and Carboline 4674 and to reflect the paints used on instrument panels and the reactor vessel in the FSAR Update scheduled for September 1984.

NRC Question No. 2

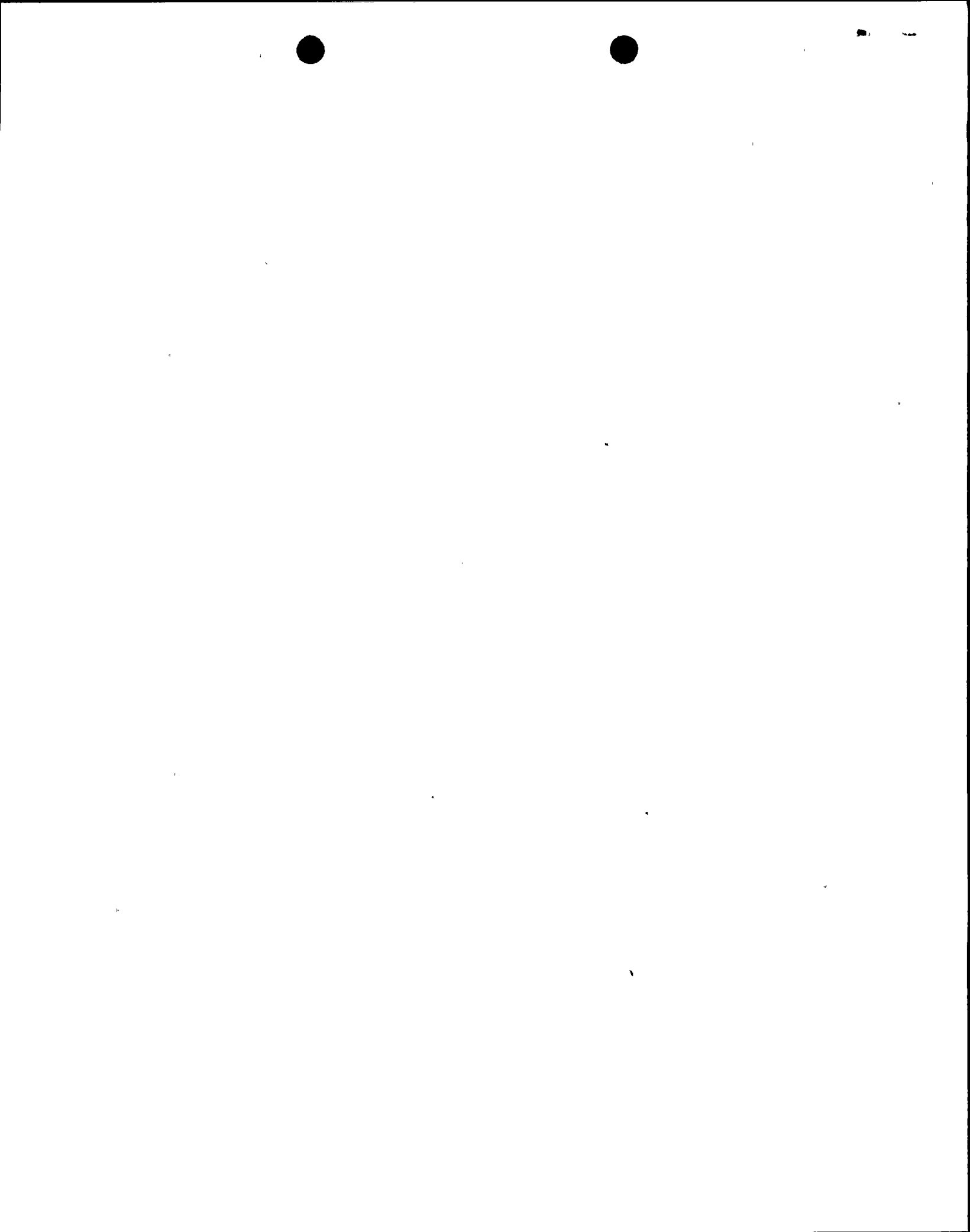
Do any of the paints meet the requirements of Regulatory Guide 1.54 or ANSI N101.4-1972 on Quality Assurance Requirements for Protective Coatings Applied to Water-Cooled Nuclear Power Plants?

Response

PGandE has had a controlled program for painting and special coatings in effect since the start of painting activities at Diablo Canyon in 1972. About 90% of the current Class-A coatings have been in place since early 1977.

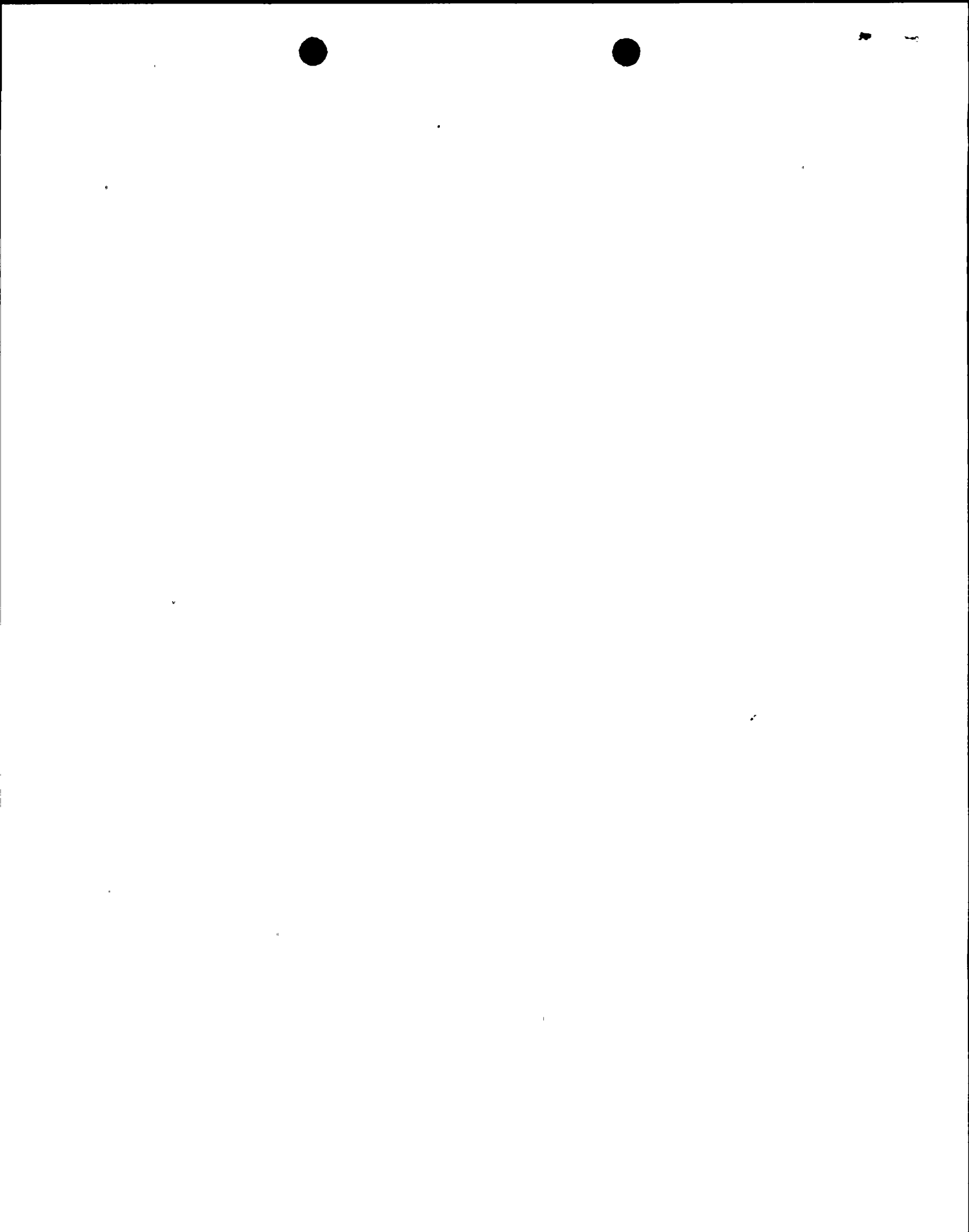
This program, which is similar to programs maintained by plants of similar licensing vintage, has always provided the following controls:

1. The specification, which is a part of the painting contract, incorporates the requirements of ANSI N101.2 and ANSI N5.12. These ANSI documents establish the standards for painting and the use of protective coatings in the nuclear industry.
2. Safety-related equipment and building areas potentially subjected to relatively large quantities of radioactive materials, high radiation fields, high probability of contamination by radionuclides, spills, splash, fumes from acids and alkalis, frequent exposure to high humidity and temperature, exposure to decontamination reagents (acids, alkalis) and steam cleaning, and/or constant immersion in de-ionized water were identified as requiring Class-A coatings. All Class-A coating purchase orders required manufacturers' certification of compliance with specifications. In addition, all Class-A coatings were batch sampled, tested, and accepted by the PGandE Department of Engineering Research before they were released for use.
3. Painting activities conducted by the painting contractor were monitored and sample tested by PGandE as directed by written instructions. Civil Resident Engineer Instruction No. C-15 was in effect before painting was started on May 1, 1972, and was used until completion of the contract in December 1977. Instruction C-15 requirements are to:
 - a. Maintain a daily log of painting activities.
 - b. Prepare and submit to the Field Engineer daily inspection reports which detail activities and any problems found. These reports address the material painted, paint materials, temperature, moisture content, method of application, condition of substrate, surface preparation, dry film thickness of previous coat, wet film thickness, work force, and other work details.



- c. Perform weekly inspections of paint in storage and provide written reports of these audits to the field engineer.
 - d. Report deviations from specification requirements on an exception report form to the Field Engineer.
 - e. Document equipment and buildings as ready for painting and release for painting in a written format.
4. Painting performed by PGandE personnel or personnel provided by the cleanup contractor were directed by the PGandE paint foreman and inspected by inspectors who reported to the paint foreman. The forms originally required by Instruction C-15 were not used. However, a log of painting activities was maintained. The remaining maintenance work was done after the initial completion of the plant in 1977. Since this time, parameters such as humidity and temperature in Class-A areas would not have varied sufficiently to adversely affect application of coating. Process variables, although not recorded, were controlled since application was performed by experienced maintenance contract personnel and monitored by PGandE. During this time, the paint testing and inspection of stock was maintained. The foreman's daily paint logs record the type of coating applied and the location.
 5. All inspectors performing paint inspections were qualified by the PGandE resident civil engineer or paint foreman based on a review of the inspector's experience. Guidance for qualification of these inspectors was provided by PGandE's coatings specialist.

The controls described in paragraphs 1 through 5 have provided and ensured the appropriate quality of protective coatings. The quality of the protective coatings is evident now by the absence of chipping, flaking, holidays, bubbling, or other signs of defective materials or application on the existing installations. Many of these applications have been in place about ten years and have been subjected to the conditions encountered during the three plant hot functional tests. In addition, the plant layup environment is more severe in some respects than an operating environment due to the condensation that occurs at lower temperatures.



NRC Question No. 3

During what time period were each of the paints applied to the containment surfaces?

Response

Painting at DCPD was started in May 1972. The majority of the painting for both units, approximately 90%, was completed prior to 1978. For example, the following paints were applied to Unit 1 during the time period indicated:

<u>Item or Area</u>	<u>Time Period Painted</u>	<u>Paint</u>
Dome Liner	8/72 thru 11/72	Carboline HB 191
Polar Crane	6/72 thru 7/72	Phenoline 305
Fan Coolers	6/74 thru 11/74	Phenoline 305
Accumulator Tanks	5/74 thru 6/74	Dimetcote 6
Annulus	7/72 thru 1/75	Carbo Zinc 11
Concrete Walls	3/74 thru 1/75	Amercoat-66
Concrete Floors	1/75 thru 1/76	Amercoat-66
Piping (Vendor Applied)	1970 thru 1974	Mobil Zinc 7 Mobil 13R-711

NRC Question No. 4

We have estimated that the amount of debris which can be generated from unqualified paint inside containment may total 6400 pounds with a volume of 34 cubic feet. Provide assurances that up to 34 cubic feet of debris will not impair the function of safety-related equipment.

Response

As discussed in the response to the first three questions, the paint in containment has either been qualified to ANSI N101.2 or it is retained by insulation. Thus, no significant amount of debris from coatings can accumulate at the sump screen.

