SAFETY EVALUATION REPORT

ALLEGATION 100

SOLID DEBRIS FROM UNQUALIFIED PAINTS INSIDE CONTAINMENT

DIABLO CANYON, UNITS 1 AND 2

DOCKET NOS. 50-275/323

Characterization

(Same as SSER 22)

Implied Significance to Design, Construction, or Operation

(Same as SSER 22)

Assessment of Safety Significance

(Same as SSER 22)

Staff Position

(Use the text of the attached memorandum dated May 18, 1984, and then add to the end of it the following:)

The staff has evaluated the consequence of potentially generating three cubic feet of debris by considering the effects of this debris on the net positive suction head (NPSH) available for safety systems, such as the containment spray or ECCS.

The maximum reduction in net positive suction head (NPSH) that could be caused by this amount of debris, if it were all transported to the sump intake screens, would be a small fraction

of one foot of water. There is a minimum margin for NPSH of four feet of water for the worst-case post-accident configurations of equipment. Therefore, it is the staff's position that three cubic feet of debris will not have a significant adverse effect on the operability of the containment sump and the associated safety systems. Accordingly, it is acceptable for Diablo Canyon to operate with the potential to generate three cubic feet of solid debris from unqualified paints inside containment under DBA conditions.

Action Required

No further action required.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

MAY 18 1984

MEMORANDUM FOR: Walter R. Butler, Chief
Containment Systems Branch
Division of Systems Integration

Brian Sheron, Chief
Reactor Systems Branch
Division of Systems Integration

FROM: Victor Benaroya, Chief
Chemical Engineering Branch
Division of Engineering

SUBJECT: ESTIMATE OF SOLID DEBRIS FORMATION FROM UNQUALIFIED PAINTS INSIDE CONTAINMENT UNDER DBA CONDITIONS FOR DIABLO CANYON, UNITS 1 AND 2

Reference: Memo, Victor Benaroya to Walter Butler, February 27, 1984

We have reevaluated our estimate of solid debris formation from unqualified paints inside containment on the basis of the licensee's response, by letter dated May 9, 1984. The amount of debris which can be generated from unqualified paint is estimated at 500 pounds with a volume of about 3 cubic feet.

We consider that inside containment, unqualified paints which do not meet the provisions of Regulatory Guide 1.54, Quality Assurance Requirements for Protective Coatings Applied to Water-Cooled Nuclear Power Plants (June 1973), and ANSI N 101.2, Protective Coatings (Paints) for Light Water Nuclear Reactor Containment Facilities (1972), can be a source of hydrogen generation and debris formation. This is a conservative assumption because all unqualified paints would not be affected.

Our initial estimate (see reference memo), concluded that the debris from unqualified paint may total 6400 pounds with a volume of 34 cubic feet. In the licensee's letter, dated May 9, 1984, additional paints were identified which have been tested in accordance with and meet the requirements of ANSI N101.2, Protective Coatings (Paints) for Light Water Nuclear Reactor Containment Facilities (1972). Some additional unqualified paints have been removed from the estimate because they are covered with thermal insulation and will be trapped behind the insulation, thus, preventing transport to the sump.

The quality assurance control program instituted by the licensee for the qualified paints inside containment are comparable to the guidance provided by Regulatory Guide 1.54, Quality Assurance Requirements for Protective Coatings Applied to Water-Cooled Nuclear Power Plants. About 90% of the coatings have been in place since early 1977. The plant layup environment could be more severe than an operating environment due to condensation. However, the qualified paints on the containment surfaces shows no evidence of chiping, flaking, holidays, bubbling or other indications of defective materials or improper application.

The consequence of solid debris that can potentially be formed from unqualified paints are reviewed in SRP Section 6.2.2.

Victor Benaroya, Chief
Chemical Engineering Branch
Division of Engineering

Contact: F. Witt
x28360

cc: R. Vollmer
W. Johnston
L. Rubenstein
J. Shapaker
C. McCracken
H. Schierling
G. Knighton
A. Serkiz
J. Pulsipher
F. Witt
E. Sullivan
S. Pawlicki

ENCLOSURE 2

SALP

prepared by the Containment Systems Branch

Evaluation Criteria	Category	Diablo Canyon, Units 1 and 2 Narrative Description
1. Management Involvement		N/A
2. Approach to Resolution of Technical Issues	2	The licensee has generally demonstrated understanding of the issues. Their approach was viable and sound from a safety standpoint.
3. Responsiveness	2	The licensee responded to NRC concerns in a positive and timely manner.
4. Enforcement History		N/A
5. Reportable Events		N/A
6. Staffing		N/A
7. Training		N/A