

TVA EMPLOYEE CONCERNS
SPECIAL PROGRAM

REPORT NUMBER: 301.07-SQN

REPORT TYPE: Sequoyah Nuclear Plant - Element

REVISION NUMBER: 3

TITLE: General Paint Concern Reactor Building

REASON FOR REVISION:

Revised to incorporate SRP comments	Revision 1
Revised to incorporate SRP comments and include SQN corrective action response.	Revision 2
To incorporate revised SQN corrective action plan	Revision 3

PREPARATION

PREPARED BY:

W. J. Elliott
SIGNATURE

3-12-87
DATE

REVIEWS

PEER:

[Signature]
SIGNATURE

3/10/87
DATE

TAS:

[Signature]
SIGNATURE

3/16/87
DATE

CONCURRENCES

SIGNATURE DATE

CEG-H: Thomas F. Huth 3/13/87
SRP: James R. Bushel 3-17-87
SIGNATURE* DATE

APPROVED BY:

W. R. Brown 3/17/87
ECSP MANAGER DATE

N/A
MANAGER OF NUCLEAR POWER DATE
CONCURRENCE (FINAL REPORT ONLY)

*SRP Secretary's signature denotes SRP concurrences are in files.

TENNESSEE VALLEY AUTHORITY

SEQUOYAH NUCLEAR PLANT

EMPLOYEE CONCERNS TASK GROUP

OPERATIONS

CEG

Subcategory: Mechanical Equipment Reliability and Design

Element: General Paint Concern Reactor Building

Report Number: 301.07-SQN Revision 3
XX-85-087-001

Evaluator:	<u>G. D. Gardner</u> <i>WJE</i>	<u>3-12-87</u>
	G. D. Gardner	Date
Reviewed by:	<u><i>W. R. Lagergren</i></u>	<u>3/12/87</u>
	OPS CEG Member	Date
Approved by:	<u><i>Thomas F. Huth</i></u>	<u>3/12/87</u>
	<i>for</i> W. R. Lagergren	Date

I. GENERAL PAINT CONCERN REACTOR BUILDING

This report evaluates a specific employee concern identified for Sequoyah Nuclear Plant (SQN), XX-85-087-001, regarding the integrity and maintenance of containment paint coatings. This issue was determined to be potentially safety related by the Employee Concerns Task Group (ECTG) Technical Assistance Staff.

II. SPECIFIC EVALUATION METHODOLOGY

The employee concern identified to Quality Technology Company (QTC) for SQN is as follows:

XX-85-087-001

Sequoyah unit 1 & 2: Containment paint coatings (#295 and #305) are not properly maintained. The integrity of the coatings is being eroded and questionable. CI is concerned that the paint will curl and pop-up and clog the drains in case of a (LOCA) accident when the temperature and pressure builds up in the reactor. Paint specifications and standards are not followed, especially in recoating of 305. NUC Power concern. CI has no further information.

The ECTG files were reviewed and a Nuclear Safety Review Staff (NSRS) report was found for the above concern. The report was reviewed for adequacy and a cognizant engineer in SQN QA was contacted for the status of NSRS recommended corrective actions.

Revision 0 of this evaluation included IN-86-273-001 which was an identical issue identified for Watts Bar Nuclear Plant by the same concerned individual. The IN-86-273-001 will be evaluated by the Construction Category Evaluation Group (CEG) in Subcategory C0 10300 for issues related to the construction phase and will not be addressed by the Operations CEG.

III. FINDINGS

The NSRS report for SQN (Reference 1) was reviewed and determined to adequately address Employee Concern XX-85-087-001. Therefore, this report endorses the findings and conclusions of the NSRS report.

The NSRS report found that concrete coatings were adhering well with some exceptions where significant mechanical damage has occurred with water seepage causing some delamination in these areas.

The report noted that, although some corrective maintenance has been performed, a formalized program of periodic inspection and maintenance did not exist. Preventive maintenance routines were being developed at that time, however.

NSRS inspections of the steel containment liner found areas of phenoline 305 delamination and areas where total film thickness was exceeded.

The SQN plant response to the NSRS report (Reference 3) indicates that the NSRS recommendations were being implemented. The NSRS accepted the plant response (Reference 4) along with the corrective actions being performed under Corrective Action Report SQ-CAR-86-01-001 (References 5 and 6).

The cognizant QA engineer who prepared the CAR stated that his evaluation had occurred about the same time as the NSRS investigation. The QA survey had reached the same conclusions although he was unaware of the ongoing NSRS investigation at that time. He stated that the corrective actions specified by the plant in response to the CAR included resolving the NSRS recommendations and performing a baseline evaluation and inspection to determine the present condition of all containment coatings at SQN. He also stated that QA would require documented verification for completion of all corrective actions prior to closure of the CAR.

The CAR as written is identified as "nonsignificant." The Nuclear Quality Assurance Manual (NQAM) defines a "significant condition adverse to quality" as "Those which represent gross or widespread noncompliance with procedural requirements which negate the effectiveness of quality assurance controls imposed by this quality assurance manual; or any condition which has recurred with such a frequency that it indicates past corrective action (if any) has been ineffective." Based on this definition, the lack of an overall TVA program to ensure the quality of Critical Structures, Systems, and Components (CSSC) protective coatings appears to be a significant condition adverse to quality. The "nonsignificant" designation of the CAR by SQN QA does not appear justified based on the NQAM definition since the CAR addresses the lack of an upper-tier program and not just a SQN noncompliance with an existing procedure.

CONCLUSIONS

The issue presented by Employee Concern XX-85-087-001 regarding maintenance of coatings was validated by the NSRS report. The report noted areas of delamination and mechanical damage, however, it was believed no impact on safety existed. The report concluded that the need for maintenance was recognized by responsible personnel; however, a formalized program was not yet complete, although it was in a development stage. The lack of a formalized program for ensuring the quality of protective coatings appears to represent a significant breakdown in the QA program relative to the specific area investigated.

IV. PERCEIVED ROOT CAUSE

The root cause specified by the SQN plant staff in response to SQ-CAR-86-01-001 was the lack of a controlling upper tier document for coating repairs and maintenance. This report concurs with that root cause and, based on the findings of the NSRS evaluation for SQN and NQAM definition, considers it to be a significant condition adverse to quality.

V. GENERIC APPLICABILITY

Specific concerns on containment coatings exist for SQN and WBN and evaluations have been conducted by NSRS and ECTG. Based on the results of these evaluations and the root cause specified above, the issue of coatings repair and maintenance is considered generically applicable for BFN.

The issue is not considered generically applicable to BLN because limited coatings have been applied there and the plant is in a construction rather than maintenance/operation phase.

VI. REFERENCES

1. NSRS Investigation Report I-85-812-SQN, "Containment Protective Coatings Repair," Employee Concern XX-85-087-001, January 26, 1986
2. NSRS Investigation Report I-85-817-WBN, "Containment Coating Repair," Employee Concern IN-86-273-001, March 11, 1986
3. Memorandum from H. L. Abercrombie to K. W. Whitt on response to NSRS Report I-85-812-SQN, dated February 20, 1986
4. Memorandum from K. W. Whitt to H. L. Abercrombie on Corrective Action Response Evaluation, dated April 9, 1986
5. Corrective Action Report (CAR) SQ-CAR-86-01-001, dated January 24, 1986
6. Memorandum from C. R. Brimer to P. R. Wallace on Corrective Action for SQ-CAR-86-01-001, dated February 18, 1986 (SO1 860218 832)
7. Memorandum from P. R. Wallace to H. L. Abercrombie on completion of Corrective Actions for SQ-CAR-86-01-001, dated July 11, 1986 (SO1 860711 910)

VII. IMMEDIATE OR LONG-TERM CORRECTIVE ACTIONS

Corrective actions are currently underway in response to SQ-CAR-86-01-001 and NSRS Report I-85-812-SQN which includes a baseline inspection to determine all areas requiring repair and development of new procedures to control all aspects of containment coatings at SQN. Corrective actions will be tracked and verified by SQ-CAR-86-01-001 prior to closure. The plant identified corrective actions for the CAR (reference 6) does not specifically identify the NSRS recommendations to be resolved nor does it specify actions taken to resolve the root cause issue on a corporate level. The root cause specified by SQN was a lack of an upper tier document controlling coatings repair and maintenance. The corrective actions are currently scheduled to be complete by November 1, 1986 (reference 7) prior to unit startup.

Because the CAR identifies a lack of an overall TVA Program to ensure the quality of CSSC coatings and the NQAM definition of a significant CAQ, it would appear that SQ-CAR-86-01-001 should be upgraded to "significant."

The following acceptable corrective action plan was provided by SQN:

Comments on CATD OP 30107-001-SQN

SQ-CAR-86-01-001 was not written because of deficiencies found by Nuclear Safety Review Staff (NSRS) Report I-85-812-SQN. This Corrective Action Report (CAR) was generated by an audit that was conducted by site QA staff. Sequoyah Nuclear Plant (SQN) has responded to the NSRS report in a memorandum from H. L. Abercrombie to K. W. Whitt dated February 20, 1986. This Corrective Action Plan (CAP) further specifies which steps have been taken and the documents that the work was implemented under.

The upper-tier document specified by the CAR is for the SQN site and will be generated as a SQN Standard Practice Procedure (SQM). This SQM will be written from the specifications and requirements of G-Specifications-55.

Schedule

All physical work necessary to bring each unit containment protective coating within limits of the uncontrolled coating established by the Division of Nuclear Engineering (DNE) will be completed before each unit startup. Program changes (issues of revised G-55, MI-10.14, and a new SQM), will be required. Revision of G-Specification-55 and issue of a new SQM is required for unit 2 restart. Revision to other procedures (MI-10.14 and SQEP-13, etc.) is not required for restart.

|R3
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Action Items

The following actions have been taken in response to NSRS Report I-85-812-SQN, and SQ-CAR-86-01-001.

1. NSRS Recommendation I-85-812-SQN-01

- a. The deficient areas of lower containment floor were recoated by Engineering Change Notice (ECN) 6682. This was implemented by Workplan 12069. All physical work is complete.
- b&c. The liner wall delaminating carboline 305 topcoat was removed on both units by MR Nos. A523804, A548573, and A547675. This work was inspected by Maintenance Instruction MI-10.14. The carboline 305 topcoat will be reinstalled at a later outage. | R3
- d. The floor on 734' elevation was determined not to require repair. NSRS accepted this position.
- e. S.G. Pinney & Associates, Inc., (SGPI) was contracted to do a detail baseline evaluation inspection using the Preventative Maintenance (PM) program data sheets. Attached is a summary of the results of the inspections. Deficient areas have been added to the uncontrolled coating inventory maintained by Division of Nuclear Engineering (DNE). The data sheets from the PM program will be reviewed prior to U2 restart to verify that all priority work (required before restart) has been completed and documented. | R3

2. NSRS Recommendation I-85-812-SQN-02

Delaminating topcoat was removed by MR Nos. A523804, A548573, and A547675. Further inspection for all areas was conducted by preventative maintenance (PM) 1435-364 and 1439-364.

3. NSRS Recommendation I-85-812-SQN-03

A formalized PM instruction for inspection of Level I coating has been developed. This group of instructions is on System 364. All preliminary inspections have been completed.

4. NSRS Recommendation I-85-812-SQN-04

MI-10.14 will be revised in accordance with G-Specification-55 upon revision of the G-Spec. This action is being tracked by SQ-CAR-86-01-001. A draft revision has been proposed by DNE, and SQN site has made comments to the proposed draft.

5. NSRS Recommendation I-85-812-SQN-05

In accordance with SQ-CAR-86-01-001, SQN site will generate a SQM for the protective coating program. The issue of this procedure is dependent on the issue of the revision to G-Specification-55. This "SQM" procedure is the upper-tier document for SQN site.

- 6. Additional deficiencies were found on the inspection of SGPI. Minor repair work was done under WRs and MRs. Three major problems still exist, and need to be resolved or reworked before startup of either unit.

- a. Reactor Coolant Pump (RCP) motor coating is unqualified. SQN-NEB-8610, documents this CAQ. ECN L7001 will correct the deficiency by providing a screen to contain the coating chips at the RCP base. This is a restart action. |R3
- b. Pressurizer Relief Tank (PRT) - The lower portion of the PRT potentially has unqualified coating. Further study is required to determine the qualifications of the coating. If the coating is unqualified, the exact solution will be determined through the Significant Condition Report and ECN process. This resolution is a restart action. This deficiency was discovered during the baseline evaluation of SQ-CAR-86-01-001.
- c. Steam Generator and Pressurizer Enclosures - The coating on these enclosures were determined to be unqualified. This was determined during baseline evaluation of SQ-CAR-86-01-001. The area will be recoated by ECN L7012. This is a restart action. |R3

7. Sequoyah Element Report 301.07 SQN R1

SQ-CAR-86-01-001 has been reevaluated by the site QA supervisor. This CAR is not considered to be associated with a gross deficiency in the QA program and is therefore not significant. Additionally, the deficiencies were evaluated by NSRS Report I-85-812-SQN to have no significant safety impact and was evaluated by PRO No. 1-86-139 as not reportable to the NRC. There are problems with the program that have been identified and corrective actions taken are appropriate.

REFERENCE - ECPS120J-ECPS121C
 FREQUENCY - REQUEST
 UNP - ISSS - RHM

ATTACHMENT 3
 Element Summary Table
 TENNESSEE VALLEY AUTHORITY
 OFFICE OF NUCLEAR POWER
 EMPLOYEE CONCERN PROGRAM SYSTEM (ECPS)
 LIST OF EMPLOYEE CONCERN INFORMATION

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CATEGORY: OP PLANT OPER. SUPPORT

SUBCATEGORY: 30107 GENERAL PAINT CONCERN RX BLDG

CONCERN NUMBER	CAT	SUB CAT	S H R PLT D LOC	GENERIC APPL B B S W F L Q D	QTC/NSRS INVESTIGATION REPORT	P S R	CONCERN DESCRIPTION
XX -85-087-001 T50186	OP	30107	N SQN	Y N Y Y REPORT	I-85-812-SQN	MS	SEQUOYAM UNIT 1 & 2: CONTAINMENT PAINT COATINGS (#295 AND #305) ARE NOT PROPERLY MAINTAINED. THE INTEGRITY OF THE COATINGS IS BEING ERODED & QUESTIONABLE. CI IS CONCERNED THAT THE PAINT WILL CURL & POP-UP AND CLOG THE DRAINS IN CASE OF A (LOCA) ACCIDENT WHEN THE TEMPERATURE AND PRESSURE BUILDS UP IN THE REACTOR. PAINT SPECIFICATIONS AND STANDARDS ARE NOT FOLLOWED, ESPECIALLY IN RECOATING OF #305. NUC POWER CONCERN. CI HAS NO FURTHER INFORMATION.

KEYWORD A
 KEYWORD B
 KEYWORD C
 KEYWORD D

PROTECTIVE COATING
 PREVENTIVE MAINT
 CIVIL
 COATINGS

1 CONCERNS FOR CATEGORY OP SUBCATEGORY 30107