

May 26, 2009

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE COMMISSION

_____)	
In the Matter of)	
)	
FirstEnergy Nuclear Operating Company)	Docket No.
(Beaver Valley Power Station, Units 1 and 2))	50-334 and
_____)	50-412

**PETITION BY CITIZEN POWER TO REQUIRE SUPPLEMENTATION OF THE
SAFETY EVALUATION REPORT FOR BEAVER VALLEY POWER STATION,
UNITS 1 AND 2**

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TABLE OF CONTENTS

I. INTRODUCTION AND SUMMARY	1
II. DESCRIPTION OF PETITIONER AND ITS INTERESTS	2
III. NATURE OF PETITION	5
IV. REGULATORY FRAMEWORK	7
A. Requirements of Atomic Energy Act and NRC Regulations for Renewal of Operating Licenses.	7
B. NRC Staff's Legal responsibility In License Renewal Reviews	9
C. The Review Process For License Renewal	10
D. NRC Staff Practice Regarding Supplementary SERs	11
V. THE FACTS OF THE REPORT	12
VI. THE SER MUST BE UPDATED.....	13
A. The SER Incorrectly Assumed Visual Inspections Would Reliably Detect Significant Corrosion of the Containment Liner.....	13
B. The SER Incorrectly Assumed that the Applicant's ASME Code Section XI, Subsection IWE Program for Which the Applicant Claimed Consistency With the GALL Report is Consistent With the GALL Report	14
VII. CONCLUSION AND REQUEST FOR RELIEF.....	16

TABLE OF AUTHORITIES

JUDICIAL DECISIONS

<i>Kelley v. Selin</i> , 42 F.3d 1501 (6th Cir. 1995).....	4
<i>Steel Co. v. Citizens for a Better Env't</i> , 523 U.S. 83 (1998).....	4
<i>Union of Concerned Scientists v. NRC</i> , 735 F.2d 1437 (D.C. Cir. 1984), cert. denied, 469 U.S. 1132 (1985).....	7
<i>Union of Concerned Scientists v. NRC</i> , 920 F.2d 50 (D.C.Cir. 1990).....	7
<i>Wilderness Soc'y v. Griles</i> , 824 F.2d 4 (D.C. Cir. 1987).....	4

ADMINISTRATIVE DECISIONS

<i>AmerGen Energy Co. LLC</i> (Oyster Creek Nuclear Generating Station), CLI-08-23 (2008).....	5
<i>Commonwealth Edison Co.</i> (Byron Nuclear Power Station, Units 1 and 2), ALAB-678, 15 NRC 1400 (1982).....	9
<i>Consolidated Edison Co. of N.Y., Inc.</i> (Indian Point, Units 1, 2 and 3), CLI-75-8, 2 NRC 173 (1975).....	5
<i>Entergy Nuclear Vermont Yankee L.L.C. and Entergy Nuclear Operations, Inc.</i> (Vermont Yankee Nuclear Power Station), LBP-04-28, 60 NRC 548 (2004).....	4
<i>Exelon Generation Co., LLC</i> (Early Site Permit for Clinton ESP Site), CLI-05-17, 62 NRC 5 (2005).....	9
<i>Florida Power & Light Co.</i> (St. Lucie Nuclear Power Plant, Units 1 and 2), CLI-89-21, 30 NRC 325 (1989).....	4
<i>Florida Power & Light Co.</i> (Turkey Point Nuclear Generating Plants, Units 3 and 4), LBP-01-06, 53 NRC 138 (2001).....	4
<i>Georgia Institute of Technology</i> (Georgia Tech Research Reactor, Atlanta, Ga.), CLI-95-12, 42 NRC 111 (1995).....	4
<i>Pacific Gas and Electric Company</i> (Diablo Canyon Power Plant Independent Spent Fuel Storage Installation), CLI-02-23, 56 NRC 230 (2002).....	5, 6, 7
<i>South Carolina Electric and Gas Co.</i> (Virgil C. Summer Nuclear Station, Unit 1), ALAB-642, 13 NRC 881 (1981).....	9

<i>U.S. Army (Jefferson Proving Ground Site), LBP-06-26, 64 NRC 438, 456 (2007)</i>	6
<i>Virginia Elec. and Power Co. (North Anna Nuclear Power Station, Units 1 and 2), ALAB-522, 9 NRC 54 (1979)</i>	4
<i>Yankee Atomic Elec. Co. (Yankee Nuclear Power Station), CLI-98-21, 48 NRC 185 (1998)</i>	4

STATUTES

Atomic Energy Act

42 U.S.C. § 2133.....	8
42 U.S.C. § 2133(d).....	1, 2, 8
42 U.S.C. § 2201(b).....	1
42 U.S.C. § 2201(c).....	1
42 U.S.C. § 2232(a).....	1, 2
42 U.S.C. § 2239(a)(1)(A).....	1

NRC REGULATIONS

10 C.F.R. § 2.206.....	6
10 C.F.R. § 2.309(d)(1).....	3
10 C.F.R. § 2.323.....	1
10 C.F.R. § 2.802.....	6
10 C.F.R. § 52.29(a).....	2
10 C.F.R. § 54.21(a)(3).....	2
10 C.F.R. § 54.27.....	1
10 C.F.R. § 54.29.....	1

FEDERAL REGISTER NOTICES

Final Rule, Changes to Adjudicatory Process 69 Fed. Reg. 2182 (January 14, 2004).....6

Final Rule, Rules of Practice for Domestic Licensing Proceedings – Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,171 (Aug. 11, 1989).....8

Final Rule, Nuclear Power Plant License Renewal, 56 Fed. Reg. 64,943 (December 13, 1991).....8

NRC GUIDANCE DOCUMENTS

NRC Inspection Manual, Inspection Procedure 71002 (February 18, 2005).....10

NRR Office Letter No. 805, License Renewal Application Review Process (June 19, 1998).....10, 11

MISCELLANEOUS

Hull, et al, *NPP License Renewal and Aging Management: Extrapolating American Experience*, submitted to the First Symposium on Nuclear Pressure Equipment and Regulation (NuPEER), Dijon, France (June 22-24, 2005).....9-10

Safety Evaluation Report With Open Item Related to the License Renewal of Beaver Valley Power Station, Units 1 and 2 (January 2009).....passim

Transcript of Oyster Creek ASLB Hearing (September 24 and 25, 2007).....7

I. INTRODUCTION AND SUMMARY

Pursuant to the Atomic Energy Act (“AEA”), 42 U.S.C. §§ 2133(d), 2201(b) and (c), 2232(a), and 2239(a)(1)(A); and implementing regulations 10 C.F.R. §§ 2.323, 54.27, and 54.29, Citizen Power; (“Petitioner”) hereby requests the U.S. Nuclear Regulatory Commission (“NRC” or “Commission”) to instruct the NRC Staff to supplement the Safety Evaluation Report (“SER”) for the Beaver Valley Power Station, Units 1 and 2 (“Beaver Valley”).

This Petition is based upon the facts contained in NRC Daily Event Report for April 24, 2009, Event Number 45015 (the “Report”), which is available at <http://www.nrc.gov/reading-rm/doc-collections/event-status/event/2009/20090424en.html>. This Petition shows that the information in the Report contradicts two critical findings made by the Staff in the SER and therefore undermines the Staff’s overall finding that the Aging Management Program (“AMP”) for the internal containment liner to which FirstEnergy Nuclear Operating Company (“FENOC”) has committed would provide reasonable assurance of adequate protection during any extended period of operation. The critical SER findings that the information in the Report contradicts are: i) visual inspections are a reliable method to detect containment failure and ii) the Applicant’s ASME Code Section XI, Subsection IWE Program, is consistent with the Generic Aging Lessons Learned (“GALL”) Report.

Based upon the facts in the Report, Citizen Power’s Expert Witness, Mr. Arnold Gundersen has concluded that the AMP for the containment liner must be enhanced. Ex. 1 at 32. As stated in the Report, the ASME XI Section IWE General Visual examination detected an area of corrosion approximately 1 inch by 3/8 inch *only* after it had penetrated

through the containment steel liner plate. Mr. Gundersen has determined that this indicates the unexplained presence of significant oxygen and moisture at the corrosion location. Ex. 1 at 24.3. This corrosion was not previously detected by visual, ultrasonic, and integrated leak-rate inspection techniques. Ex. 1 at 23.1. The fact that both the failure of the steel containment liner plate was not detected until after the breach occurred and also the unexplained presence of sufficient oxygen and moisture to cause the breach casts doubt on the Staff's finding that "the applicant has demonstrated that the effects of aging will be adequately managed so that the intended functions will be maintained consistent with the CLB for the period of extended operation, as required by 10 CFR 54.21(a)(3)." SER at 3-107.

Therefore, without enhancement of the existing SER, the NRC does not have an adequate basis to determine whether the AMP for the internal containment liner at Beaver Valley 1 would provide adequate protection to public health and safety during the license renewal term, as required by 42 U.S.C. § 2232(a) and 10 C.F.R. § 52.29(a). Nor does the NRC have any basis for concluding that continued operation of nuclear power plants under license renewal terms would not be inimical to the common defense and security or public health and safety, as required by 42 U.S.C. § 2133(d). Thus, unless that Staff supplements the SER, the Commission cannot issue a renewed license for Beaver Valley 1.

II. DESCRIPTION OF PETITIONER AND ITS INTERESTS

Citizen Power is a nonprofit, 501(c)(3), public policy research, education and advocacy organization based in Pittsburgh, Pennsylvania. Citizen Power has worked for safe, clean, and affordable energy for the last 13 years. Prior to joining Citizen Power,

Citizen Power staff have been involved in nuclear plant prudence proceedings at state PUCs in Ohio and Pennsylvania.

Citizen Power is not asking to intervene in this proceeding, but instead is filing a “general motion” directly with the Commission. However, if the Commission determines that Citizen Power must meet the standing requirements required to intervene, Citizen Power satisfies the NRC’s proximity standing requirements. Specifically, Citizen Power’s headquarters is located within the geographic area that might be affected by an accidental release of fission products. Citizen Power is located at 2121 Murray Avenue, Pittsburgh, Pennsylvania, 15217, which is less than fifty miles from the Beaver Valley Power Station.¹ In addition, David Hughes, the Executive Director of Citizen Power, lives at 4037 Ludwick Street, Pittsburgh, Pennsylvania, 15217, which is less than fifty miles from the Beaver Valley Power Station.²

A petitioner’s standing in a Commission licensing proceeding is derived from section 189a of the Atomic Energy Act (AEA). This section requires the NRC to provide a hearing “upon the request of any person whose interest may be affected by the proceeding.” The Commission has implemented this requirement at 10 C.F.R. § 2.309(d)(1).³ When determining whether a petitioner has established a sufficient interest to

¹ According to a Google Maps search, Beaver Valley Power Station is located 43.4 driving miles away from 2121 Murray Avenue. A direct path would be even shorter.

² According to a Google Maps search, Beaver Valley Power Station is located 43.3 driving miles away from 4037 Ludwick Street. A direct path would be even shorter.

³ In the relevant part, 10 C.F.R. § 2.309(d)(1)(ii)-(iv) gives three factors that shall be considered in determining whether to grant the petitioner standing: “(ii) The nature of the requestor’s/petitioner’s right under the Act to be made a party to the proceeding; (iii) The nature and extent of the requestor’s/petitioner’s property, financial or other interest in the proceeding; and (iv) The possible effect of any decision or order that may be issued in the proceeding on the requestor’s/petitioner’s interest.”

intervene, licensing boards generally use judicial concepts of standing. *Entergy Nuclear Vermont Yankee, L.L.C., & Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Station), LPB-04-28, 60 NRC 548, 552 (2004). In order to qualify for standing, a petitioner must “allege (1) a concrete and particularized injury that is (2) fairly traceable to the challenged action and (3) likely to be redressed by a favorable decision.” *Yankee Atomic Elec. Co.* (Yankee Nuclear Power Station), CLI-98-21, 48 NRC 185, 195 (1998) (citing *Steel Co. v. Citizens for a Better Env’t*, 523 U.S. 83, 102-04 (1998); *Kelley v. Selin*, 42 F.3d 1501, 1508 (6th Cir. 1995)). This injury may be real or threatened. *id.* at 195 (citing *Wilderness Soc’y v. Griles*, 824 F.2d 4, 11 (D.C. Cir. 1987)). In addition, a “proximity presumption” has been established by Commission case law whereby an individual may fulfill the standing requirements by virtue of living or having activities within a 50-mile radius of a nuclear power plant. *Florida Power & Light Co.* (St. Lucie Nuclear Power Plant, Units 1 and 2), CLI-89-21, 30 NRC 325, 329 (1989); *Virginia Elec. and Power Co.* (North Anna Nuclear Power Station, Units 1 and 2), ALAB-522, 9 NRC 54, 56 (1979); *Florida Power & Light Co.* (Turkey Point Nuclear Generating Plants, Units 3 and 4), LBP-01-06, 53 NRC 138, 146-50 (2001). However, this proximity presumption has an additional requirement that there be “an obvious potential for offsite consequences.” *Georgia Institute of Technology* (Georgia Tech Research Reactor, Atlanta, Ga.), CLI-95-12, 42 NRC 111, 116 (1995). In the current case, the potential for the loss of functionality of the containment liner could have significant offsite consequences.

Citizen Power has both organizational standing based on the location of its offices and representational standing based on the affidavit of David Hughes, the Executive

Director of Citizen Power, stating that he authorizes Citizen Power to file a petition on his behalf.

Citizen Power seeks the relief requested above in Section I because the NRC Staff's evaluation of the Beaver Valley License Renewal Application ("LRA") has failed to comply with the AEA and NRC implementing regulations that are intended to ensure safe operation of the plant.⁴

III. NATURE OF PETITION

This Petition constitutes a request to the Commission to exercise its supervisory authority to ensure that NRC decisions with respect to the re-licensing of the Facilities comply with the Commission's obligations under the AEA to protect public health and safety, and to ensure that the NRC provides a meaningful opportunity for public participation in its licensing decisions. *Consolidated Edison Co. of N.Y., Inc.* (Indian Point, Units 1, 2 and 3), CLI-75-8, 2 NRC 173 (1975) (holding that the Commission has an "overriding responsibility for assuring public health and safety in the operation of nuclear power facilities"). *See also Pacific Gas and Electric Company* (Diablo Canyon Power Plant Independent Spent Fuel Storage Installation), CLI-02-23, 56 NRC 230, 236-237 (2002) (holding it appropriate for the Commission to exercise its "ultimate supervisory control" over NRC proceedings); *AmerGen Energy Company, LLC* (Oyster Creek Nuclear Generating Station), CLI-08-23 (2008), slip. op. at 17 (Commission addressed a petition regarding the adequacy of several SERs pursuant to its inherent supervisory authority).

⁴ In bringing this petition, Citizen Power does not concede that compliance with the current NRC regulations for renewal of nuclear power plant operating licenses is sufficient to provide adequate assurance that public health and safety will be protected during the license renewal term. Nevertheless, compliance with the current license renewal rules is minimally and absolutely essential to any assurance of safety during the license renewal term.

This Petition is timely because it is filed within 30 days of the public knowledge of the breach referenced in the Report.

Petitioner does not seek enforcement action against a licensee under 10 C.F.R. § 2.206, nor does Petitioner request a rulemaking under 10 C.F.R. § 2.802. Instead, Petitioner requests that the Commission instruct the Staff to supplement the SER. Because this Petition is neither a request for rulemaking nor a request for enforcement of NRC's ongoing operating requirements, it should be treated as a "general motion" filed directly with the Commission, consistent with *Pacific Gas and Electric Co.*, 56 NRC at 236-237.

Petitioner recognizes that the Commission discourages participants in adjudicatory hearings from bypassing the ASLB. *Id.*, 56 NRC at 237. However, Petitioner believes that this Petition is correctly filed with the Commission because the subject of the Petition is the performance of the NRC Staff in license renewal proceedings, a subject the Commission has excluded from the purview of the ASLB:

The Commission has made it clear that '[t]he adequacy of the applicant's license application, not the NRC staff's safety evaluation, is the safety issue in any licensing proceeding, and under longstanding decisions of the agency, contentions on the adequacy of the [content of the] SER are not cognizable in a proceeding.'

U.S. Army (Jefferson Proving Ground Site), LBP-06-26, 64 NRC 438, 456 (2007), quoting Final Rule, Changes to Adjudicatory Process; 69 Fed. Reg. 2182, 2202 (January 14, 2004).⁵ In prohibiting challenges to the adequacy of NRC Staff reviews before the ASLB,

⁵ In fact, at the recent ASLB hearing concerning Oyster Creek, Judge Abramson explicitly stated that the work of the NRC Staff was not at issue in the proceeding:

Just for clarification for those of you who are not familiar with our processes here, what's at issue here is the application by AmerGen. The staff's work is not at issue. And even though the staff is

the Commission reasoned that it is inappropriate to give the ASLB the role of supervising the NRC Staff. 69 Fed. Reg. at 2202. Thus, it is appropriate for Petitioner to raise the issue before the Commission, which has ultimate supervisory authority. *Pacific Gas and Electric Company*, 56 NRC at 236-37.

While the Commission has prohibited Petitioner from raising its concerns about the adequacy of the NRC Staff's review before the ASLB, those concerns are nevertheless material to the NRC's decisions in the license renewal proceedings for the Facilities because, as the Commission has stated, "the NRC may not issue a license until all appropriate safety findings have been made." 69 Fed. Reg. at 2,202 (citations omitted). Accordingly, the Commission should consider the issues raised by this Petition in the course of the license renewal proceedings for the Facilities. *Union of Concerned Scientists v. NRC*, 735 F.2d 1437, 1438-50 (D.C. Cir. 1984), cert. denied, 469 U.S. 1132 (1985). See also *Union of Concerned Scientists v. NRC*, 920 F.2d 50, 53 (D.C. Cir. 1990) (holding that "Section 189(a) [of the Atomic Energy Act, 42 U.S.C. 2239(a),] prohibits the NRC from preventing all parties from ever raising in a hearing a specific issue it agrees is material to [a licensing]. . . decision.").

IV. REGULATORY FRAMEWORK

A. Requirements of Atomic Energy Act and NRC Regulations for Renewal of Operating Licenses.

formally a party to our proceeding that's a holdover from our old regulations which have recently been revised. Staff is, in fact, here as an amicus to us to help us understand what the staff thought when it reviewed the application. Their work is not at issue.

Transcript of Oyster Creek ASLB Hearing at 9:19-10:3 (September 24 and 25, 2007) (available at ML072700833 and ML072700797).

Section 103 of the Atomic Energy Act, 42 U.S.C. § 2133, grants the Commission authority to issue licenses for the commercial exploitation of special nuclear material. It states that such licenses “may be renewed upon the expiration of” the initial licensed period. 42 U.S.C. § 2133(c). However, the Commission is required to find that the authorized utilization of special nuclear material is “in accord with the common defense and security and will provide adequate protection to the health and safety of the public.” 42 U.S.C. § 2232(a). *See also* 42 U.S.C. § 2133(d) (“[N]o license may be issued to any person within the United States if . . . in the opinion of the Commission, the issuance of a license to such person would be inimical to the common defense and security or to the health and safety of the public.”)

To implement these requirements, the Commission has promulgated regulations that lay out the specific requirements for relicensing. In 1991, recognizing that “age related degradation will be critical to safety during the term of [a] renewed license,” the Commission established a requirement for a plant-wide review of age-related degradation. Final Rule, Nuclear Power Plant License Renewal; 56 Fed. Reg. 64,943, 64,960 (December 13, 1991). The regulations also required licensees to demonstrate that they had effective programs for management of aging equipment. 56 Fed. Reg. at 64,955.

In 1995, the Commission narrowed the scope of the plant-wide review and Aging Management Program to cover only age-related degradation of long-lived passive components. Final Rule, Nuclear Power Plant License Renewal; Revisions; 60 Fed. Reg. 22,461, 22,464 (May 8, 1995). In narrowing the scope of the equipment covered by the rule, however, the NRC did not alter the fundamental principles underlying the 1991 rulemaking, including that: (a) age-related degradation poses a threat to the continued safe

operation of nuclear power plants, and (b) safety must be maintained throughout the license renewal period by managing the effects of aging. 60 Fed. Reg. at 22,464. As the Commission explained:

The objective of a license renewal review is to determine whether the detrimental effects of aging, which could adversely affect the functionality of systems, structures, and components that the Commission determines require review for the period of extended operation, are adequately managed. The license renewal review is intended to identify any additional actions that will be needed to maintain the functionality of the systems, structures, and components in the period of extended operation.

Id. Thus, the proper identification of adequate measures for managing those effects is critical to the NRC's regulatory process for assuring safety during the license renewal term.

B. NRC Staff's Legal Responsibility In License Renewal Reviews

The NRC Staff has a legal responsibility to make safety findings on all relevant issues before a license or renewed license may issue. *Commonwealth Edison Co.* (Byron Nuclear Power Station, Units 1 and 2), ALAB-678, 15 NRC 1400, 1420 n.36 (1982), citing *South Carolina Electric and Gas Co.* (Virgil C. Summer Nuclear Station, Unit 1), ALAB-642, 13 NRC 881, 895-96 (1981). In NRC licensing proceedings, the Commission defers to the Staff's conclusions on safety issues, unless they are contested. *Exelon Generation Co., LLC* (Early Site Permit for Clinton ESP Site), CLI-05-17, 62 NRC 5, 35 (2005).

Thus, as a general matter, the Staff's findings on the adequacy of a LRA will form the basis for the NRC's decision whether to allow the facility to operate twenty years beyond its original license term. As the NRC Staff has summed up its role, "[t]he responsibility of the NRC is to ensure that plant license renewal is safe – that it does not pose additional risk to public health and safety or to the environment." Hull, et al, *NPP*

License Renewal and Aging Management: Extrapolating American Experience at 10, submitted to the First Symposium on Nuclear Pressure Equipment and Regulation (NuPEER), Dijon, France (June 22-24, 2005) (“Hull Report”) (*available in ADAMS at ML051670356*).

C. The Review Process For License Renewal

NRC guidance stipulates that the “key elements” of a LRA review consist of a “technical review” of license renewal-related programs by the NRC’s Office of Nuclear Reactor Regulation (“NRR”), plus “a series of on-site inspections.” NRR Office Letter No. 805, *License Renewal Application Review Process, Attachment 2 (Guidelines for Technical and Process Lessons Learned for License Renewal)* at 2 (June 19, 1998). The purpose of the on-site inspections is to verify that:

- (1) the license renewal programs and activities are being documented consistently with the requirements of the rule, quality assurance requirements, and site-approved procedures;
- (2) the aging management programs are being implemented consistently with information provided in the LRA and the staff safety evaluation (SE); and
- (3) the aging management programs are effectively managing the effects of aging throughout the period of extended operation.

Id.

Both the scope and the adequacy of a license renewal applicant’s program for managing aging passive components are subject to the Staff’s review. NRC Inspection Manual, Inspection Procedure 71002 at 1-2 (February 18, 2005). The NRC’s Inspection Manual confirms that the Staff is responsible for verifying -- through walk-downs, inspections and audits -- that the license renewal applicant has documented and covered all relevant systems, structures and components (“SSCs”) in its license renewal program; and that the applicant’s AMP is adequate. Inspection Procedure 71002 at 2-3. In addition, the NRC Staff must “ensure that operating experience relevant to a specific system, structure,

or component was properly considered in the nature and extent of the potential aging effects.” NRR Office Letter No. 805, Attachment 1 (*Guide for License Renewal Application Review Process*), Attachment B (*Safety Evaluation Form and Content Template*) at 2 (June 19, 1998). NRC guidance also requires the NRC Staff to document its safety review. Each SER “should provide sufficient information to explain the staff’s rationale to someone unfamiliar with the licensee’s request” for renewal of the license. NRR Office Letter No. 805, Attachment 1 (*Guide for License Renewal Application Review Process*) at 9.

D. NRC Staff Practice Regarding Supplementary SERs

As is appropriate, the Staff has adopted a longstanding practice of issuing SER supplements when new issues regarding aging management of in-scope components emerge after the SER for a particular reactor is complete. For example, the Staff issued a supplement to the Oyster Creek SER in September 2008 in response to two new issues. The first issue was the belated recognition by the Staff that certain metal fatigue calculations reported in the LRA were overly simplified. Oyster Creek SER Supplement at 1-1, *available at* ML080230078. The second issue was the licensee’s docketing of its undertaking to the Board at the hearing to enhance its commitments. *Id.*

The Staff has taken similar approaches to new information at other plants. For example, during the license renewal for Calvert Cliffs nuclear power plant, which did not involve a hearing, Staff supplemented the Calvert Cliffs SER when a potential issue arose about the need for additional aging management of submerged electrical cables.⁶ In that

⁶ <http://www.nrc.gov/reading-rm/doc-collections/commission/secys/2000/secy2000-0010/2000-0010scy.html>

case, documented commitment was merely to review the applicability of findings made elsewhere to the cables at Calvert Cliffs. Similarly, the Staff supplemented the SER related to the license renewal for the Browns Ferry nuclear power plant to document a number of commitments made to resolve issues raised by the Advisory Committee on Reactor Safeguards (“ACRS”). Browns Ferry SER (April 2006) at 1-1, *available at* ML061220272.

Thus, the Staff’s past actions regarding issuing supplements to SERs shows that if a potential issue arises that is within the scope of license renewal and could affect a Staff finding regarding the ability of the proposed AMPs to offer reasonable assurance of adequate protection, the SER should document the disposition of that issue.

V. THE FACTS OF THE REPORT

The material portion of the Report stated:

“On April 21, 2009 during the Beaver Valley Power Station Unit No.1 (BEAVER VALLEY PS-1) refueling outage, an ASME XI Section IWE General Visual examination was performed on the interior containment liner. A suspect area was identified at the 738 foot elevation level of containment. This area was approximately 3 inches in diameter and exhibited blistered paint and a protruding rust product. At approximately 1015 hours on April 23, 2009 after cleaning the area and removal of the corrosion products, a rectangular area approximately 1 inch (horizontal) by 3/8 inch (vertical) was discovered that penetrated through the containment steel liner plate (nominal .375 inch thickness). The BEAVER VALLEY PS-1 containment design consists of an internal steel liner that is surrounded by reinforced concrete.”

“With the plant currently shutdown and in Mode 6, the containment as specified in Technical Specification 3.6.1 is not required to be operable. The cause of this discrepancy is currently being evaluated.”

“This is reportable pursuant to 10 CFR 50.72(b)(3)(ii)(A) as a condition of the principal safety barrier (i.e., containment) being seriously degraded.”

VI. THE SER MUST BE UPDATED

The facts in the Report constitute additional operating experience. Because this experience contradicts a number of the Staff's expectations when the Beaver Valley SER was written, the Staff must prepare a supplement to the SER to incorporate this operating experience. Furthermore, Mr. Gundersen concluded that the operating experience related by the Report requires the proposed AMP for managing corrosion of the containment liner to be enhanced. Ex 1 at 32. The Staff must now document in a supplemental SER whether it concurs with the conclusions of Mr. Gundersen, and why.

A. The SER Incorrectly Assumed Visual Inspections Would Reliably Detect Significant Corrosion of the Containment Liner

In the LRA, Section B.2.3, the Applicant stated that the ASME Section XI, Subsection IWE program inspections "have been effective in identifying minor irregularities on the inside surface of the liner plate before significant corrosion damage occurred." LRA at B.2-8. In the conclusion to this Section, the Applicant noted "continued implementation of the ASME Section XI, Subsection IWE Program provides reasonable assurance that the aging effects will be managed so that the structures and components within the scope of this program will continue to perform their intended functions consistent with the current licensing basis for the period of extended operation." LRA at B.2-9. In table 2.4-22 of the LRA, the Applicant lists "enclosure or protection" and "structural pressure barrier" as two of the intended functions of a containment liner. LRA at 2.4-68. In the SER, the Staff concluded that the AMP "is adequate to manage the aging effects for which the LRA credits it." SER at 3-107.

However, the Staff's conclusion that the AMP will provide reasonable assurance that the liner plate will continue to perform its functions of providing protection and a

structural pressure barrier is based on two implicit assumptions. First, the Staff assumes that significant corrosion of the liner is a somewhat rare event because there is “no active mechanism for corrosion.” SER at 3-105. However, the Report shows that in at least one location, and possibly more, there is an active mechanism for corrosion. Second, the Staff believes that a visual inspection is a reliable means of detecting corrosion of the liner, at least corrosion that may affect the function of the liner. However, the Report provides evidence that a visual inspection may not always detect significant corrosion of the containment liner. Third, the Staff stated that “the ILRT [Integrated Leak Rate Test] will provide assurance that the containment liners at BVPS will continue to perform their intended functions for the period of extended operation.” SER at 3-14. However, the Report in and of itself provides evidence that the ILRT regimen may not sufficiently guarantee the functionality of the containment liners. Therefore, the Staff should determine what augmentation of the current inspection regime is necessary to provide reasonable assurance that the containment liner has not undergone significant corrosion and is capable of performing its intended functions. Mr. Gundersen suggested that a 100% ultrasonic inspection of the entire liner at BV1 be completed. Ex. 1 at 29.1.

B. The SER Incorrectly Assumed that the Applicant’s ASME Code Section XI, Subsection IWE Program for Which the Applicant Claimed Consistency With the GALL Report is Consistent With the GALL Report

In the SER, the Staff determined that augmented examinations in accordance with ASME Code Section XI, IWE-1240 were not necessary because “there is no active mechanism for corrosion”. SER at 3-103 to 3-105. However, in response to the 2006 discovery of corrosion on the concrete side of the liner plate, the Applicant added two

additional requirements to the containment inspection procedures “(1) when paint or coatings are removed for further inspection, the paint or coatings shall be visually examined by a qualified VT-3 inspector prior to removal, and (2) if the visual examination detects surface flaws on the liner or suspect areas on the liner plate that could potentially impact the leak tightness or structural integrity of the liner, then surface or volumetric examinations shall be performed to characterize the condition (i.e., depth, size, shape, orientation).” SER at 3-106. The Staff found that these modifications met the ASME Code Section XI, Subsection IWE requirements. SER at 3-106. The Staff concluded that the applicant’s ASME Code Section XI, Subsection IWE Program was consistent with the GALL Report. SER at 3-107. However, this conclusion was based on the assumption that there is no active corrosion. If the internal containment liner is subject to degradation, then under ASME Section XI, IWE-1240, a volumetric (ultrasonic thickness measurement) is required.⁷

The Staff’s conclusion that the corrosion found during RFO 17 (2006) does not indicate significant corrosion under IWE-1240 appears to be based on the analysis and evaluations of the Unit 1 containment liner corrosion in 2006 by several vendors commissioned by the Applicant. SER at 3-103 to 3-105. However, this conclusion now appears invalid because the key supporting evidence provided by these vendors in 2006 has been thrown into question by facts contained in the Report in 2009.

Specifically, a material analysis in 2006 found that access to the necessary elements of corrosion, water and oxygen, “became significantly limited” after the construction phase was complete since the corrosion process consumes oxygen and “the concrete/steel

⁷ Generic Aging Lessons Learned (GALL) Report: Tabulation of Results (NUREG-1801, Rev.1, Vol.2), at XI S-3 available at <http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1801/r1/v2/index.html>.

interface was no longer exposed to the atmosphere for re-oxygenation.” SER at 3-104. The conclusion that there is not significant degradation in the steel lining because the elements of corrosion are not present appears to be contrary to the experience described in the Report, where there was enough oxygen and water to put a hole through 3/8” of steel. As Mr. Gundersen indicates, “neither the construction voids between the liner and the concrete, which was the purported BV1 2006 reason for containment corrosion, nor BV1’s 2009 claim, that a block of wood left from construction, is the *cause* of this recent gross containment failure, because neither accounts for the significant oxygen and moisture buildup that must have occurred.” Ex. 1 at 24.3. Without the issue of how significant oxygen and moisture buildup occurred at the point of the incident in the Report, it is clear that it is the degree of corrosion throughout the steel lining is unknown and may be significant. In addition, the possibility of significant corrosion is consistent with the theory that the sub-atmospheric containment design may have pulled moisture and oxygen into the voids between the liner and the concrete, as articulated by Mr. Gundersen. Ex. 1 at 26.

VII. CONCLUSION AND REQUEST FOR RELIEF

For the foregoing reasons, the Commission should order the Staff to revise the SER to incorporate the operating experience found in the Report and then determine whether the AMPs for the liner plate remains adequate to provide reasonable assurance of adequate protection.

Respectfully submitted,

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