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Proprietary Information - Withhold from Public Disclosure Under 10 CFR 2.390

December 12, 2018
BW180116

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Braidwood Station, Unit 1
Renewed Facility Operating License No. NPF-72
NRC Docket No. STN 50-456

Subject: Submittal of Analytical Evaluation in Accordance with ASME Code Section XI

In accordance with the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," 2001 Edition through 2003 Addenda, IWB-3134, "Review by Authorities" paragraph (b) Braidwood Station is submitting an analytical evaluation associated with the reactor vessel head dome closure head ring weld inspection.

At Braidwood Station Unit 1, during the spring 2018 refueling outage (A1R20) as part of the ten-year Inservice Inspection Program, the weld between the top reactor vessel head dome and the closure head ring was inspected by ultrasonic non-destructive examination (NDE). The NDE inspection recorded nineteen indications. Based on the acceptance criteria from ASME Section XI, 2001 Edition, 2003 Addenda, Paragraph IWB-3510, nine of the indications are not acceptable and required further engineering evaluation in accordance with the IWB-3600 requirements.

Attachment 1 is the Westinghouse Electric Company LLC ("Westinghouse") evaluation of the weld indications. The evaluation, based on ASME Section XI IWB-3600 requirements, determined nine indications to be acceptable for at least 40 years of plant operation, and therefore, there is sufficient margin available based on the fracture mechanics to demonstrate the structural integrity of the closure head for at least two fuel cycles of operation.

Portions of Attachment 1 contain proprietary information as defined by 10 CFR 2.390, "Public inspection, exemption, requests for withholding." Westinghouse, as the owner of the proprietary information has executed the enclosed affidavit (Attachment 3), which identifies that the enclosed proprietary information has been handled and classified as proprietary, is customarily held in confidence, and has been withheld from public disclosure.

Attachment 1 contains Proprietary Information. Withhold from public disclosure under 10 CFR 2.390. When separated from Attachment 1, this document is decontrolled.

The proprietary information was provided to Exelon Generation Company, LLC (EGC) by Westinghouse as referenced by the affidavit. The proprietary information has been faithfully reproduced in the attached information such that the affidavit remains applicable. Westinghouse hereby requests that the attached proprietary information be withheld from public disclosure in accordance with the provisions of 10 CFR 2.390 and 10 CFR 9.17. Attachment 2 contains a nonproprietary version of Attachment 1 with brackets showing where the proprietary information has been deleted. The affidavit supporting the proprietary nature of the information is contained in Attachment 3.

There are no regulatory commitments contained in this letter.

Please direct any questions you may have regarding this submittal to Mr. Francis Jordan, Regulatory Assurance Manager, at (815) 417-2800.

Marri Marchionda-Palmer
Site Vice President
Braidwood Station

Attachments:
1. Westinghouse LTR-SDA-18-038-P Revision 0, Braidwood Unit 1 Reactor Vessel Closure Head Evaluation of As-Found Indications in the Dome to Ring Weld (Proprietary)
2. Westinghouse LTR-SDA-18-038-NP Revision 0, Braidwood Unit 1 Reactor Vessel Closure Head Evaluation of As-Found Indications in the Dome to Ring Weld (Non-Proprietary)
3. Westinghouse Application for Withholding Proprietary Information from Public Disclosure, CAW-18-4784

cc: Regional Administrator - NRC Region III
NRC Senior Resident Inspector - Braidwood Station
NRR Project Manager - Braidwood Station
Illinois Emergency Management Agency - Division of Nuclear Safety

Attachment 1 contains Proprietary Information. Withhold from public disclosure under 10 CFR 2.390. When separated from Attachment 1, this document is decontrolled.

ATTACHMENT 2

Westinghouse LTR-SDA-18-038-NP Revision 0, Braidwood Unit 1 Reactor Vessel Closure Head Evaluation of As-Found Indications in the Dome to Ring Weld (Non-Proprietary)

LTR-SDA-18-038-NP Revision 0

Braidwood Unit 1 Reactor Vessel Closure Head Evaluation of As-Found Indications in the Dome to Ring Weld

August 2018

Author: Anees Udyawar*, Structural Design Analysis III

Verifier: Bruce Newton*, WEC Equipment and Machining

Stephen Marlette*, Structural Design Analysis III

Manager: Lynn Patterson*, Structural Design Analysis III

Electronically approved records are authenticated in the electronic document management system.

Westinghouse

Forward

This document contains Westinghouse Electric Company LLC proprietary information and data which has been identified by brackets. Coding (a,c,e) associated with the brackets sets forth based on which the information is considered proprietary.

The proprietary information and data contained within the brackets in this report were obtained at considerable Westinghouse expense and its release could seriously affect our competitive position. This information is to be withheld from public disclosure in accordance with the Rules of Practice 10CFR2.390 and the information presented herein is safeguarded in accordance with 10CFR2.390. Withholding of this information does not adversely affect the public interest.

This information has been provided for your internal use only and should not be released to persons or organizations outside the Directorate of Regulation and the ACRS without the express written approval of Westinghouse Electric Company LLC. Should it become necessary to release this information to such persons as part of the review procedure, please contact Westinghouse Electric Company LLC, which will make the necessary arrangements required to protect the Company's proprietary interests.

The proprietary information in the brackets has been deleted in this report. The deleted information is provided in the proprietary version of this report (LTR-SDA-18-038-P Revision 0).

Background and Purpose

During the Spring 2018 refueling outage (A1R20) at Braidwood Unit 1, in-service examinations of the reactor vessel closure head [1] dome-to-ring weld (Figure 1) discovered several ultrasonic testing (UT) indications. The UT examinations (performed from the OD-outside diameter surface) were based on ASME Section XI Appendix VIII (PDI) qualifications and requirements [2]. A total of nineteen (19) circumferential indications were discovered. Based on comparison to ASME Section XI, 2001 Edition, 2003 Addenda, Paragraph IWB-3510, nine (9) of the indications were not acceptable and require fracture mechanics evaluation to ASME Section XI IWB-3600 requirements. It should be noted that none of the indications were surface breaking and none showed evidence of being service induced.

Thus, during the Spring 2018 outage, Westinghouse was contacted to evaluate the acceptability of the 9 rejectable circumferential indications (see Figure 2 for general location of the indications) per the ASME Section XI IWB-3600 requirements. In order to facilitate an expedient analysis, Westinghouse proposed evaluating the acceptability of the flaws for continued plant operation through at least two refueling cycles, and then provide a more detailed flaw evaluation, if necessary, to determine a maximum duration of plant operation between closure head inspections. The purpose of this letter is to transmit the results of the flaw evaluations performed for the 9 rejectable indications, per ASME Section XI IWB-3600.

Assessment of the Source of Indications

UT Methodologies

The 19 indications identified in weld 1RV-03-002 were detected using UT procedures and qualifications that, when compared to previous UT technology (such as that used during the previous ISI of 1RV-03-002 in 1998) are known to employ increased scan sensitivity. Unlike the 1998 UT, the recent weld scan used procedures, equipment, and personnel qualified to the Performance Demonstration Initiative (PDI) requirements of ASME Section XI, Appendix VIII (PDI-6 for flaw detection and PDI-7 for flaw sizing) [3]. Differences between the 1998 UT methodology and the 2018 PDI UT methodology include:

- [

]$^{(a,c,e)}$

- [

]$^{(a,c,e)}$

- [

]$^{(a,c,e)}$

[

]$^{(a,c,e)}$

Other potential causes

Weld defects can be caused by in-service conditions. One contributor to weld flaws and defects is exposure to process fluids or other external contaminants that, when permitted to contact the weld, contribute to erosion, corrosion, cracking, and other defect types. Weld 1RV-03-002 is not a likely candidate for defects of this nature, because the weld is isolated from contact with process fluids by cladding that is installed on the reactor pressure vessel Head ID (inside diameter) surface. The PDI UT that detected the 19 flaws did not reveal evidence that any were 'surface breaking', nor did the UT reveal any breach in the clad deposit. As a result, the 19 indications are not likely to have been exposed to process fluids or other external contaminants, making this an unlikely cause contributor.

Weld defects can also occur in welds as a result of undue stresses being placed on the weld. Stresses come from many potential sources, including direct loading, thermal transients, and cyclic fatigue. Customer review of thermal and pressure transients for the Braidwood Unit 1 RPV demonstrated that operations (and therefore stresses) are within normal and acceptable design tolerances. Absent operating conditions that would place unacceptable levels of stress on weld 1RV-03-002, it is considered unlikely that exposure to unacceptable stress levels caused any of the 19 indications that were detected.

[

]$^{(a,c,e)}$

Summary/Conclusion

The 19 indications detected in weld 1RV-03-002 exhibit an appearance that is considered 'typical' for 'new' indications detected when PDI-qualified UT is first applied to welds of this type. Based on flaw appearance and prior experience, Westinghouse considers it likely that these flaws have been present in the weld from the time of original manufacture. As a result, the flaws identified in this 2018 PDI-qualified UT examination are not considered new defects; rather, they are likely existing defects rendered visible for the first time due to application of a more sensitive inspection methodology. It is considered likely that these flaws have been present throughout plant operation, and that their size, orientation and extent has remained unchanged throughout.

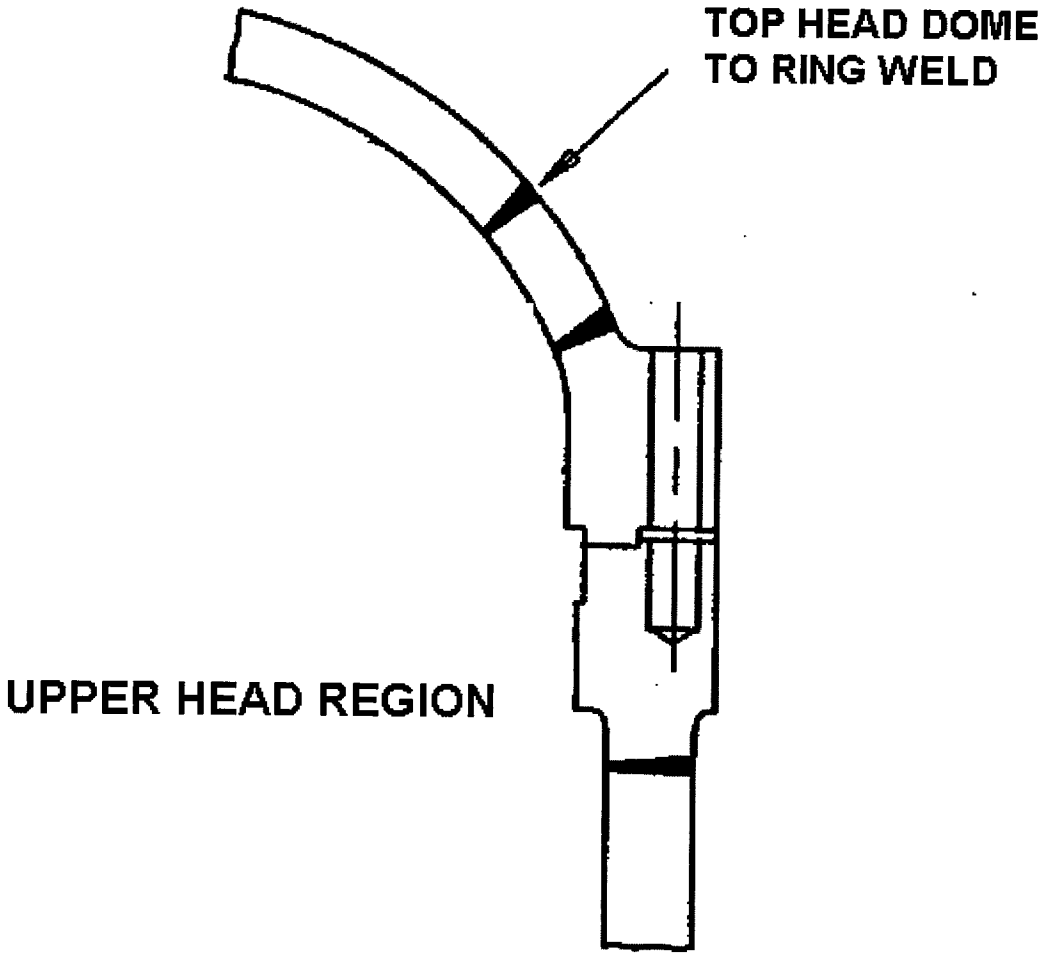


Figure 1: Reactor Vessel Head Dome to Ring Weld Location

a,c,e

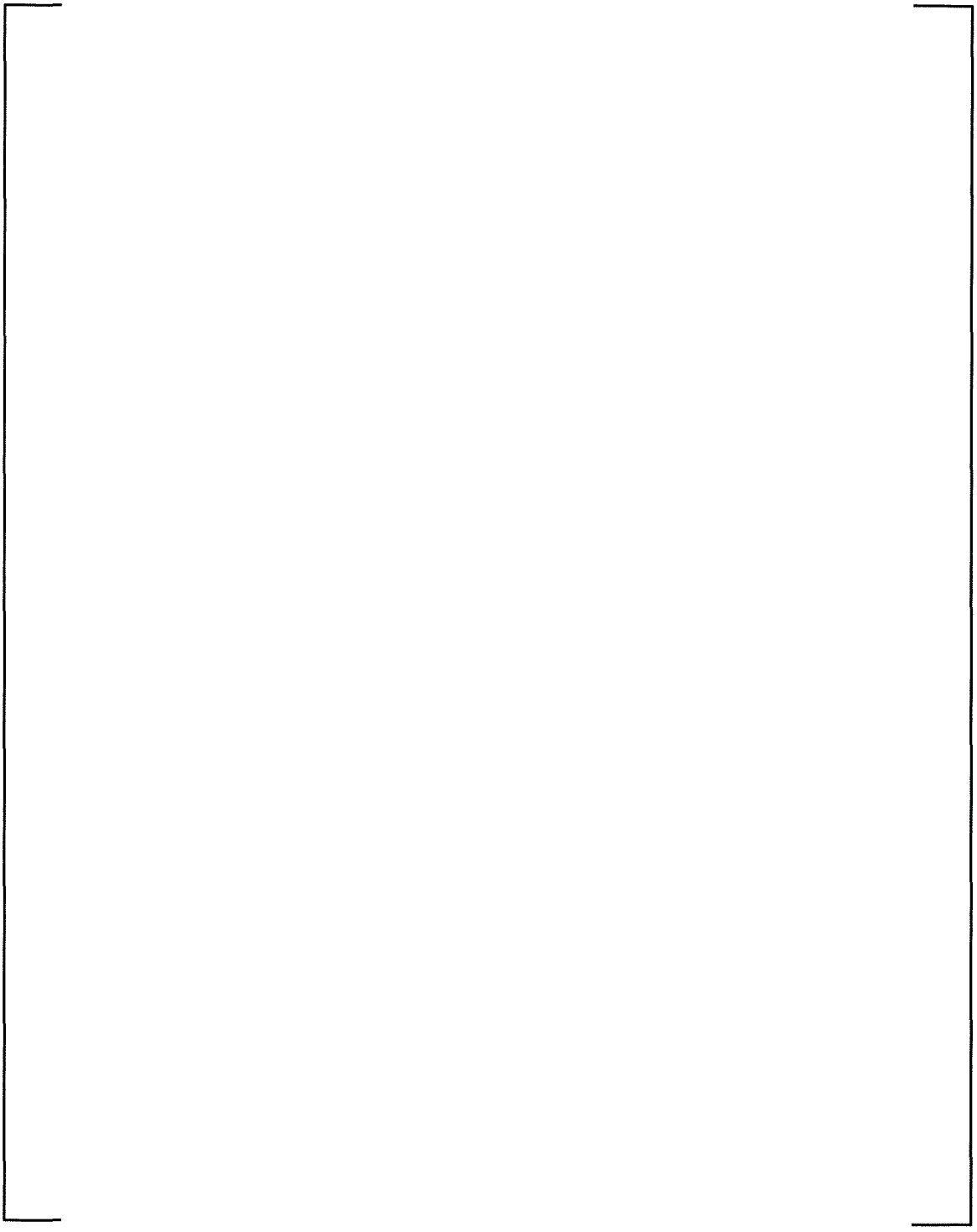


Figure 2: General Location of Indications in the Reactor Vessel Head Dome to Ring Weld

Methodology for Section XI Flaw Evaluation

Westinghouse developed a flaw handbook [4] applicable to Braidwood Units 1 and 2 and Byron Units 1 and 2 in 2003. The flaw handbook was prepared to allow quick assessments of indications that may be discovered during in-service inspections. This assessment capability is provided in the form of flaw evaluation charts for both surface flaws and embedded flaws in different regions of the reactor vessel. The fracture mechanics evaluation for the flaw handbook was done based on ASME Section XI IWB-3600 criteria. Therefore, the use of the handbook allows the acceptability of much larger indications than would be allowed by only using the acceptance standard tables of Section XI IWB-3500.

[

]$^{(a,c,e)}$.

ASME Code Acceptance Criteria for Ferritic Components

There are two alternative sets of flaw acceptance criteria for ferritic components in paragraph IWB-3600 of ASME Code Section XI to assess continued service without repair.

1. Acceptance Criteria Based on Flaw Size (IWB-3611)
2. Acceptance Criteria Based on Stress Intensity Factor (IWB-3612)

To determine whether a flaw is acceptable for continued service without repair, the more beneficial of the two criteria (IWB-3611 and IWB-3612) may be used. For thick sections, the two criteria are essentially identical, but for thinner sections such as the reactor vessel safe end region, IWB-3612 criteria are more beneficial. All of the embedded flaw charts and most outside surface flaw evaluation charts in the handbook were constructed using IWB-3612 acceptance criteria for ease of use, as well as to obtain the maximum benefit since these criteria will generally be less restrictive for embedded flaws.

Criteria Based on Flaw Size per ASME Section XI IWB-3611

The code acceptance criteria stated in IWB-3611 of Section XI are:

$a_f < 0.1\ a_c$ For Normal Conditions (Upset & Test Conditions Inclusive)

$a_f < 0.5\ a_i$ For Faulted Conditions (Emergency Condition Inclusive)

where:

a_f = The maximum size to which the detected flaw is calculated to grow at the end of a specified period, or until the next inspection time.

a_c = The minimum critical flaw size under normal operating conditions (upset and test conditions inclusive)

a_i = The minimum critical flaw size for initiation of non-arresting growth under postulated faulted conditions (emergency conditions inclusive).

To determine whether a flaw is acceptable for continued service without repair, both criteria must be met. However, both criteria have been considered in the development of the flaw handbook. Only the most restrictive results were considered in the construction of flaw evaluation charts.

Criteria Based on Stress Intensity Factor per ASME Section XI IWB-3612

The term stress intensity factor (K_I) is defined as the driving force on a crack. It is a function of the size of the crack and the applied stresses, as well as the overall geometry of the structure. In contrast, the fracture toughness (K_{Ia}, K_{Ic}) is a measure of the resistance of the material to propagation of a crack. It is a material property and a function of temperature. The criteria are:

$$K_I < \frac{K_{Ia}}{\sqrt{10}}$$ For normal conditions (upset & test conditions inclusive)

$$K_I < \frac{K_{Ic}}{\sqrt{2}}$$ For faulted conditions (emergency conditions inclusive)

where:

K_I = The maximum applied stress intensity factor for the flaw size a_f to which a detected flaw will grow, during the conditions under consideration, for a specified period, or to the next inspection.

K_{Ia} = Fracture toughness based on crack arrest for the corresponding crack tip temperature.

K_{Ic} = Fracture toughness based on fracture initiation for the corresponding crack tip temperature.

To determine whether a flaw is acceptable for continued service without repair, both criteria must be met. However, both criteria have been considered in the construction of the charts. Only the most restrictive results were considered in the construction of flaw evaluation charts. Note that in the newer editions of the ASME Section XI Code (2005 Addenda), the fracture toughness is based on K_{Ic} in lieu of K_{Ia}; thus, the flaw handbook for Braidwood [4] has been based on a conservative criteria.

Primary Stress Limits

In addition to satisfying the fracture criteria, the primary stress limits of the ASME Code Section III, paragraph NB-3000 must be satisfied. A local area reduction of the pressure retaining membrane must be used, equal to the area of the indication, and the stresses increased to reflect the smaller cross section. All the flaw evaluation charts provided in the handbook have included this consideration.

[

]$^{(a,c,e)}$

Analysis and Results

As mentioned previously, the flaw evaluation charts developed per ASME Section XI IWB-3600 are provided in WCAP-12046 [4]. These flaw evaluation charts provided disposition of as-found indications for up to 40 years of operation. [

]$^{(a,c,e)}$

In order to evaluate the as-found indication based on the flaw evaluation chart in Figure 3, the indication must be characterized as to its location, length (l) and depth (2a) for embedded flaws. Furthermore, the smallest distance from the edge of flaw to the nearest surface must also be characterized and provided as the term "S". [

]$^{(a,c,e)}$

[

]$^{(a,c,e)}$

The dimensions and characterization of the nine (9) as-found circumferential indications that were rejectable per IWB-3500 are provided in Table 1 [3]. The surface proximity rules (used to determine if the detected indication is surface or embedded) are determined based on IWB-3610 (Figure IWB-3610-1), (see Figure 4). As shown in Table 1, all of the indications meet the criterion for embedded flaws (S > 0.4a) per ASME Section XI Figure IWB-3610-1. [

]$^{(a,c,e)}$ Per Figure 5, with the exception of Indication #19, all the as-found indications are demonstrated to be acceptable based on IWB-3600 for at least 40 years of plant operation.

[

]$^{(a,c,e)}$ Therefore, this flaw was evaluated in detail per IWB-3600. A fatigue crack growth analysis was performed for indication #19 based on an initial half flaw depth (a) [ ]$^{(a,c,e)}$. The fatigue crack growth was based on ASME Section XI Appendix A guidelines [2] for postulated flaws in low alloy steels exposed to air environments. Based on a consideration of the applicable transients and cycles for Braidwood Unit 1, the initial half flaw depth of [ ]$^{(a,c,e)}$ grows to a flaw depth of [ ]$^{(a,c,e)}$ in 40 years (minimal crack growth). The final flaw depth (after 40 years) was analyzed per the IWB-3600 acceptance criteria to demonstrate flaw stability. Thus, indication #19 has also been demonstrated to be acceptable per ASME Section XI for at least 40 years of plant operation.

Primary Stress Limits

In order to address the concern for local reduction of the wall thickness due to the rejectable indications, an evaluation was performed to consider the total reduction of the RV head cross section for each indication. Table 2 shows the calculated dimension based on the NDE results provided in [3]. Indication 19 is the most limiting in terms of depth and is calculated to be [ ]$^{(a,c,e)}$ though-wall considering the recorded local wall thickness. [

]$^{(a,c,e)}$ Therefore, the reduction in cross section due to the rejectable indications is negligible and Indication 19 would not exceed primary local stress limits.

Conclusion

Ultrasonic examinations of the Braidwood 1 reactor vessel head dome to ring weld during the Spring 2018 refueling outage (A1R20) revealed a total of nineteen (19) circumferential indications. Based on ASME Section XI, 2001 Edition, 2003 Addenda, Paragraph IWB-3510 nine (9) of the indications were not acceptable and required fracture mechanics evaluation to ASME Section XI IWB-3600 requirements.

The nine (9) indications were evaluated based on ASME Section XI IWB-3600 and determined to be acceptable for at least 40 years of plant operation. Therefore, there is sufficient margin available based on the fracture mechanics to demonstrate the structural integrity of the closure head for at least two fuel cycles of operation (36 months).

a,c,e

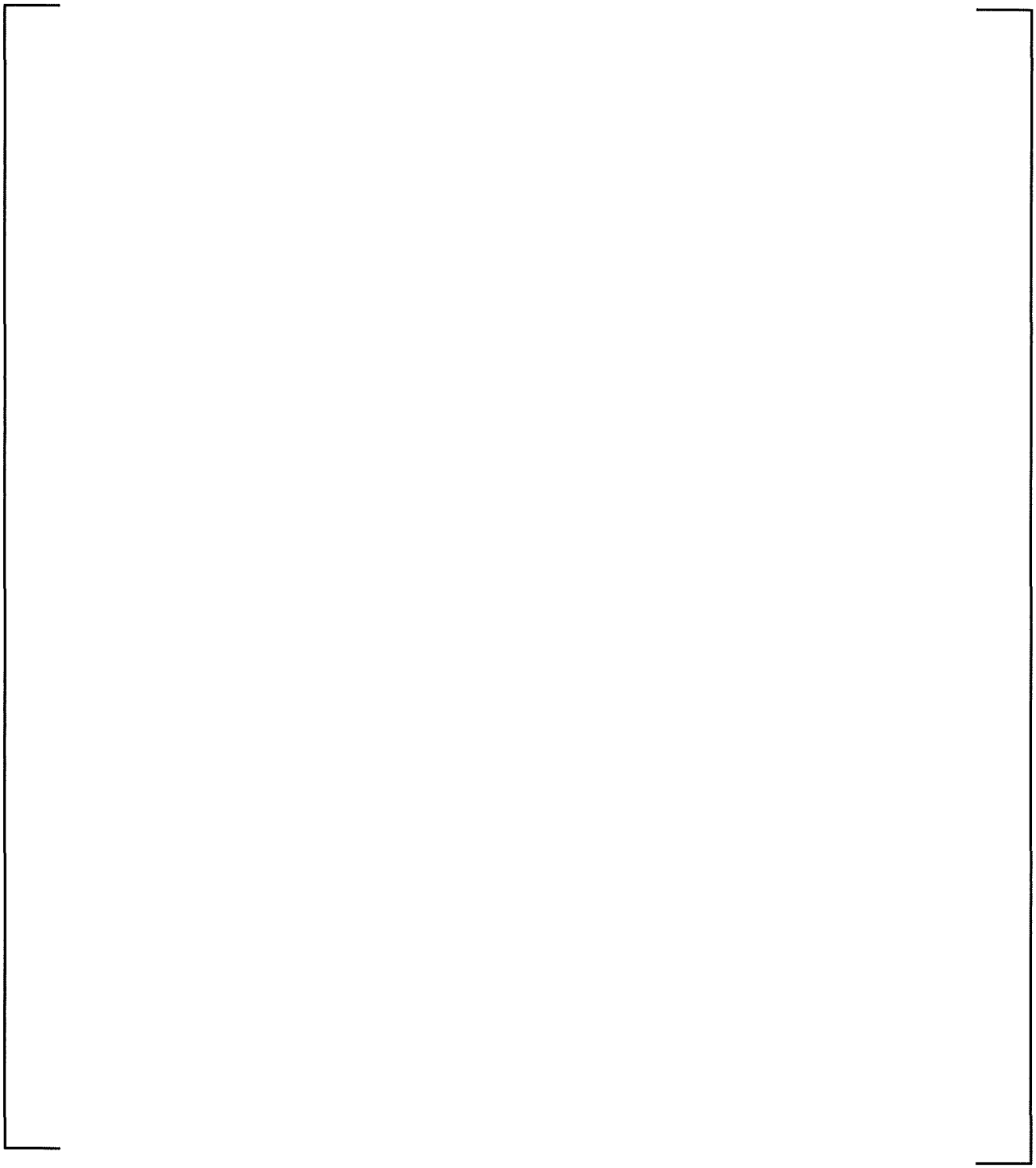
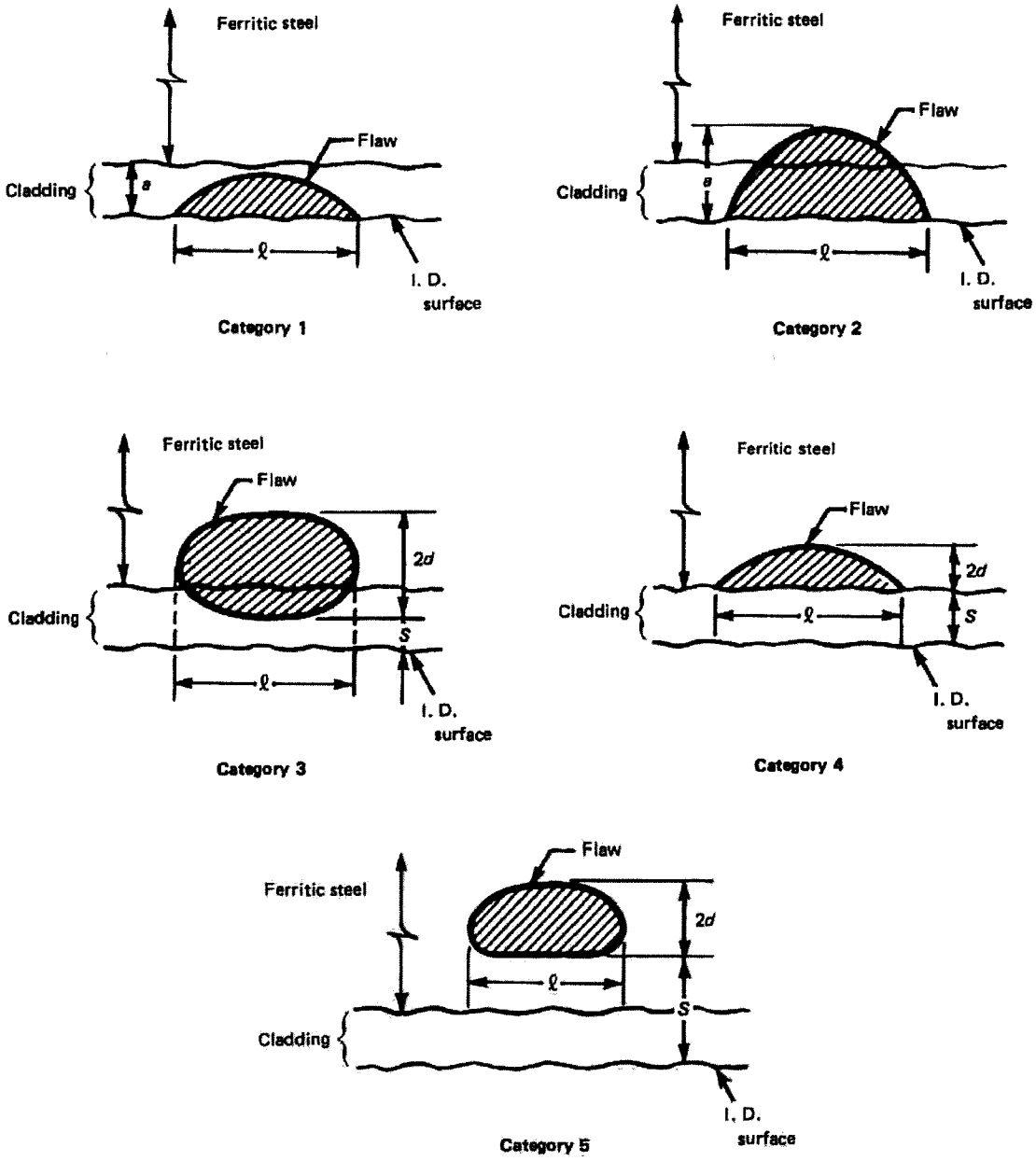


Figure 3: Embedded Flaw Chart A-11.7 from WCAP-12046 Rev. 0 [8]



GENERAL NOTE: For Categories 3, 4, and 5:

If $S \geq 0.4d$, then $a = d$ (subsurface flaw)
If $S < 0.4d$, then $a = S + 2d$ (surface flaw)

FIG. IWB-3610-1 CHARACTERIZATION AND PROXIMITY RULES FOR ANALYTICAL EVALUATION OF CLAD COMPONENTS

Figure 4: Flaw Proximity Rules per ASME Section XI [2]

Note: the embedded flaw half depth is termed (a), which is the same as (d) in the above figure

Table 1 Braidwood Unit 1 Head-to-Ring-Weld Indication Parameters a,c,e

a,c,e

Figure 5: Embedded Flaw Evaluation Chart Showing Braidwood Indications

Table 2 Area Reduction due to Rejectable Indications a,c,e

[

]

References

1. [ ](a,c,e)
2. ASME Boiler & Pressure Vessel Code, 2001 Edition with 2003 Addenda, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components."
3. [ ](a,c,e)
4. WCAP-12046, Rev. 1, "Handbook on Flaw Evaluation for the Byron and Braidwood Units 1 and 2 Reactor Vessels," September, 2003.
5. ASME Boiler & Pressure Vessel Code, 1983 Edition, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components."
6. [ ](a,c,e)
7. ASME Boiler and Pressure Vessel Code, 1971 Edition, Through Summer 1973 Addenda, Section III.
8. WCAP-12046, Rev. 0, "Handbook on Flaw Evaluation for the Zion, Byron and Braidwood Units 1 and 2 Reactor Vessels," November, 1988.

Approval Information
Author Approval Udyawar Anees Aug-22-2018 09:33:17
Verifier Approval Marlette Stephen Aug-22-2018 09:49:05
Verifier Approval Newton Bruce Aug-22-2018 12:04:17
Manager Approval Patterson Lynn Aug-22-2018 12:44:42

ATTACHMENT 3

Westinghouse Application for Withholding Proprietary Information from Public Disclosure
CAW-18-4784

Westinghouse Electric Company
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Cranberry Township, Pennsylvania 16066
USA

U.S. Nuclear Regulatory Commission
Document Control Desk
11555 Rockville Pike
Rockville, MD 20852

Direct tel: (412) 374-5541
Direct fax: (724) 940-8542
e-mail: mercieej@westinghouse.com

CAW-18-4784

August 16, 2018

APPLICATION FOR WITHHOLDING PROPRIETARY INFORMATION FROM PUBLIC DISCLOSURE

Subject: LTR-SDA-18-038-P, Revision 0, "Braidwood Unit 1 Reactor Vessel Closure Head Evaluation of As-Found Indications in the Dome to Ring Weld." (Proprietary)

The Application for Withholding Proprietary Information from Public Disclosure is submitted by Westinghouse Electric Company LLC ("Westinghouse"), pursuant to the provisions of paragraph (b)(1) of Section 2.390 of the Nuclear Regulatory Commission's ("Commission's") regulations. It contains commercial strategic information proprietary to Westinghouse and customarily held in confidence.

The proprietary information for which withholding is being requested in the above-referenced report is further identified in Affidavit CAW-18-4784 signed by the owner of the proprietary information, Westinghouse. The Affidavit, which accompanies this letter, sets forth the basis on which the information may be withheld from public disclosure by the Commission and addresses with specificity the considerations listed in paragraph (b)(4) of 10 CFR Section 2.390 of the Commission's regulations.

Accordingly, this letter authorizes the utilization of the accompanying Affidavit by Exelon Generation Company.

Correspondence with respect to the proprietary aspects of the Application for Withholding or the Westinghouse Affidavit should reference CAW-18-4784 and should be addressed to Edmond J. Mercier, Manager, Fuels Licensing and Regulatory Support, Westinghouse Electric Company, 1000 Westinghouse Drive, Building 2, Suite 256, Cranberry Township, PA 16066.

Edmond J. Mercier, Manager
Fuels Licensing and Regulatory Support

CAW-18-4784

AFFIDAVIT

COMMONWEALTH OF PENNSYLVANIA:

ss

COUNTY OF BUTLER:

I, Edmond J. Mercier, am authorized to execute this Affidavit on behalf of Westinghouse Electric Company LLC ("Westinghouse") and declare that the averments of fact set forth in this Affidavit are true and correct to the best of my knowledge, information, and belief.

Executed on: 8/16/2018

Edmond J. Mercier, Manager
Fuels Licensing and Regulatory Support

(1) I am Manager, Fuels Licensing and Regulatory Support, Westinghouse Electric Company LLC ("Westinghouse"), and as such, I have been specifically delegated the function of reviewing the proprietary information sought to be withheld from public disclosure in connection with nuclear power plant licensing and rule making proceedings, and am authorized to apply for its withholding on behalf of Westinghouse.

(2) I am making this Affidavit in conformance with the provisions of 10 CFR Section 2.390 of the Nuclear Regulatory Commission's ("Commission's") regulations and in conjunction with the Westinghouse Application for Withholding Proprietary Information from Public Disclosure accompanying this Affidavit.

(3) I have personal knowledge of the criteria and procedures utilized by Westinghouse in designating information as a trade secret, privileged or as confidential commercial or financial information.

(4) Pursuant to the provisions of paragraph (b)(4) of Section 2.390 of the Commission's regulations, the following is furnished for consideration by the Commission in determining whether the information sought to be withheld from public disclosure should be withheld.

(i) The information sought to be withheld from public disclosure is owned and has been held in confidence by Westinghouse.

(ii) The information is of a type customarily held in confidence by Westinghouse and not customarily disclosed to the public. Westinghouse has a rational basis for determining the types of information customarily held in confidence by it and, in that connection, utilizes a system to determine when and whether to hold certain types of information in confidence. The application of that system and the substance of that system constitute Westinghouse policy and provide the rational basis required.

Under that system, information is held in confidence if it falls in one or more of several types, the release of which might result in the loss of an existing or potential competitive advantage, as follows:

(a) The information reveals the distinguishing aspects of a process (or component, structure, tool, method, etc.) where prevention of its use by any of

Westinghouse's competitors without license from Westinghouse constitutes a competitive economic advantage over other companies.

(b) It consists of supporting data, including test data, relative to a process (or component, structure, tool, method, etc.), the application of which data secures a competitive economic advantage (e.g., by optimization or improved marketability).

(c) Its use by a competitor would reduce his expenditure of resources or improve his competitive position in the design, manufacture, shipment, installation, assurance of quality, or licensing a similar product.

(d) It reveals cost or price information, production capacities, budget levels, or commercial strategies of Westinghouse, its customers or suppliers.

(e) It reveals aspects of past, present, or future Westinghouse or customer funded development plans and programs of potential commercial value to Westinghouse.

(f) It contains patentable ideas, for which patent protection may be desirable.

(iii) There are sound policy reasons behind the Westinghouse system which include the following:

(a) The use of such information by Westinghouse gives Westinghouse a competitive advantage over its competitors. It is, therefore, withheld from disclosure to protect the Westinghouse competitive position.

(b) It is information that is marketable in many ways. The extent to which such information is available to competitors diminishes the Westinghouse ability to sell products and services involving the use of the information.

(c) Use by our competitor would put Westinghouse at a competitive disadvantage by reducing his expenditure of resources at our expense.

(d) Each component of proprietary information pertinent to a particular competitive advantage is potentially as valuable as the total competitive advantage. If competitors acquire components of proprietary information, any one component may be the key to the entire puzzle, thereby depriving Westinghouse of a competitive advantage.

(e) Unrestricted disclosure would jeopardize the position of prominence of Westinghouse in the world market, and thereby give a market advantage to the competition of those countries.

(f) The Westinghouse capacity to invest corporate assets in research and development depends upon the success in obtaining and maintaining a competitive advantage.

(iv) The information is being transmitted to the Commission in confidence and, under the provisions of 10 CFR Section 2.390, is to be received in confidence by the Commission.

(v) The information sought to be protected is not available in public sources or available information has not been previously employed in the same original manner or method to the best of our knowledge and belief.

(vi) The proprietary information sought to be withheld in this submittal is that which is appropriately marked in LTR-SDA-18-038-P, "Braidwood Unit 1 Reactor Vessel Closure Head Evaluation of As-Found Indications in the Dome to Ring Weld" (Proprietary), for submittal to the Commission, being transmitted by Exelon Generation Company letter. The proprietary information as submitted by Westinghouse is that associated with the technical justification to support the evaluation of the as-found indications in the Dome to Ring Weld for Braidwood Unit 1 Reactor Vessel Closure Head, and may be used only for that purpose.

(a) This information is part of that which will enable Westinghouse to provide technical justification to support the evaluation of the as-found indications in the Dome to Ring Weld for Braidwood Unit 1 Reactor Vessel Closure Head.

(b) Further this information has substantial commercial value as follows:

(i) Westinghouse plans to sell the use of similar information to its customers for the purpose of providing technical justification to support the evaluation of as-found indications in the Dome to Ring Weld.

(ii) Westinghouse can sell support and defense of industry guidelines and acceptance criteria for plant-specific applications.

(iii) The information requested to be withheld reveals the distinguishing aspects of a methodology which was developed by Westinghouse.

Public disclosure of this proprietary information is likely to cause substantial harm to the competitive position of Westinghouse because it would enhance the ability of competitors to provide similar technical evaluation justifications and licensing defense services for commercial power reactors without commensurate expenses. Also, public disclosure of the information would enable others to use the information to meet NRC requirements for licensing documentation without purchasing the right to use the information.

The development of the technology described in part by the information is the result of applying the results of many years of experience in an intensive Westinghouse effort and the expenditure of a considerable sum of money.

In order for competitors of Westinghouse to duplicate this information, similar technical programs would have to be performed and a significant manpower effort, having the requisite talent and experience, would have to be expended.

Further the deponent sayeth not.

PROPRIETARY INFORMATION NOTICE

Transmitted herewith are proprietary and non-proprietary versions of a document, furnished to the NRC in connection with requests for generic and/or plant-specific review and approval.

In order to conform to the requirements of 10 CFR 2.390 of the Commission's regulations concerning the protection of proprietary information so submitted to the NRC, the information which is proprietary in the proprietary versions is contained within brackets, and where the proprietary information has been deleted in the non -proprietary versions, only the brackets remain (the information that was contained within the brackets in the proprietary versions having been deleted). The justification for claiming the information so designated as proprietary is indicated in both versions by means of lower case letters (a) through (f) located as a superscript immediately following the brackets enclosing each item of information being identified as proprietary or in the margin opposite such information. These lower case letters refer to the types of information Westinghouse customarily holds in confidence identified in Sections (4)(ii)(a) through (4)(ii)(f) of the Affidavit accompanying this transmittal pursuant to 10 CFR 2.390(b)(1).

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