



OG-02-027
July 23, 2002

WCAP-15831-P, Rev. 0
WCAP-15831-NP, Rev. 0
Project Number 694

Domestic Members

AmerenUE
Callaway
American Electric Power Co.
D.C. Cook 1 & 2
Carolina Power & Light Co.
H.B. Robinson 2
Shearon Harris
Dominion Nuclear Connecticut
Millstone 3
Dominion Virginia Power
North Anna 1 & 2
Surry 1 & 2
Duke Power Company
Catawba 1 & 2
McGuire 1 & 2
Entergy Nuclear Operations Inc.
Indian Point 2 & 3
Exelon Generation Company LLC
Braidwood 1 & 2
Byron 1 & 2
FirstEnergy Nuclear Operating Co.
Beaver Valley 1 & 2
Florida Power & Light Co.
Turkey Point 3 & 4
Northeast Utilities
Seabrook
Nuclear Management Co.
Point Beach 1 & 2
Prairie Island 1 & 2
Kewaunee
Pacific Gas & Electric Co.
Diablo Canyon 1 & 2
PSEG - Nuclear
Salem 1 & 2
Rochester Gas & Electric Co.
R.E. Ginna
South Carolina Electric & Gas Co.
V.C. Summer
STP Nuclear Operating Co.
South Texas Project 1 & 2
Southern Nuclear Operating Co.
J.M. Farley 1 & 2
A.W. Vogtle 1 & 2
Tennessee Valley Authority
Sequoyah 1 & 2
Watts Bar 1
TXU Electric
Commanche Peak 1 & 2
Wolf Creek Nuclear Operating Corp.
Wolf Creek

International Members

Electrabel
Doel 1, 2, 4
Tihange 1, 3
Electricite de France
Kansai Electric Power Co.
Mihama 1
Takahama 1
Ohi 1 & 2
Korea Hydro & Nuclear Power Co.
Kori 1 - 4
Yonggwang 1 & 2
British Energy plc
Sizewell B
Krsko
Krsko
Spanish Utilities
Asco 1 & 2
Vandellos 2
Almaraz 1 & 2
Ringhals AB
Ringhals 2 - 4
Taiwan Power Co.
Maanshan 1 & 2

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

Attention: Chief, Information Management Branch
Division of Program Management
Policy Development and Analysis Staff

Subject: Westinghouse Owners Group
Transmittal of Reports: WCAP-15831-P, Rev. 0, (Proprietary) and WCAP-15831-NP, Rev. 0, (Non-Proprietary), Entitled "WOG Risk-Informed ATWS Assessment and Licensing Implementation Process" (MUHP-1033)

This letter transmits five (5) copies of the report WCAP-15831-P, Rev. 0, (Proprietary) and three (3) copies of the report WCAP-15831-NP, Rev. 0, (Non-Proprietary), entitled "Risk-Informed ATWS Assessment and Licensing Implementation Process" dated July 2002. The Westinghouse Owners Group is submitting this topical report, WCAP-15831-P, Rev. 0, under the NRC licensing topical report program for review and acceptance for referencing in licensing actions. WCAP-15831-P provides the technical justification necessary to support licensees in evaluating plant design changes, licensing issues, and plant operability issues related to ATWS. The objective is that once approved, each WOG member may reference this report as an acceptable approach for addressing ATWS related issues.

Also enclosed are:

1. One (1) copy of the Application of Withholding Proprietary Information from Public Disclosure, CAW-02-1536 (Non-Proprietary).
2. One (1) copy of Affidavit CAW-02-1536 (Non-Proprietary).
3. One (1) copy of the Copyright Notice.
4. One (1) copy of the Proprietary Information Notice.
5. One (1) diskette containing CAFTA files.

0048
1/5 Prop
3 Non-Prop
Extra Copies forwarded
to: Sirija Shukla

OG-02-027
July 23, 2002

The enclosed diskette contains the CAFTA files requested in Issue 11 identified by the NRC from the NRC/WOG Meeting on August 23, 2000 (see Appendix B, Issue 11). These files represent the at-power ATWS model and include the evaluations for the low, high, and bounding reactivity cores. The files included are:

- Atw.eta - ATWS event tree
- Atw.caf - ATWS fault tree
- Recover.txt - Recovery file
- Atw1.be, Atw1.gt, and Atw1.tc - Database for the low reactivity core evaluation
- Atw2.be, Atw2.gt, and Atw2.tc - Database for the high reactivity core evaluation
- Atw3.be, Atw3.gt, and Atw3.tc - Database for the bounding reactivity core evaluation
- Atw1rcv.zip - Cutset results for low reactivity core evaluation (zipped file)
- Atw2rcv.zip - Cutset results for high reactivity core evaluation (zipped file)
- Atw3rcv.zip - Cutset results for bounding reactivity core evaluation (zipped file)

WCAP-15831-P develops an approach and model for a Risk Informed ATWS analysis that can be implemented by all WOG plants to evaluate plant design changes, licensing issues, and plant operability concerns. It also addresses the NRC concerns with the risk-based approach presented in WCAP-11992, "Joint Westinghouse Owners Group/Westinghouse Program: ATWS Rule Administration Process." WCAP-15831-P includes the demonstrated approach in a pilot plant application (Braidwood Station), and clarifies the regulatory requirements with respect to ATWS.

A detailed Risk Informed ATWS model was developed and quantified on a generic basis. From this a recommended WOG ATWS model was identified and applied to the Braidwood Station to assess the impact on risk of eliminating the Technical Specification that limits the ATWS Unfavorable Exposure Time (UET) to 5% or less for each fuel cycle. A UET limit effectively places additional constraints on the design moderator temperature coefficient. This restriction requires large burnable absorbable loadings, which can lead to higher fuel enrichments, larger fuel regions, and higher fuel costs. Elimination of the 5% UET restriction will result in reduced vessel fluence, less spent fuel, and lower fuel cycle costs.

The approach used in WCAP-15831-P is consistent with Regulatory Guides 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Current Licensing Basis" and 1.177, "An Approach for Plant-Specific, Risk-Informed Decisionmaking: Technical Specifications." WCAP-15831-P addresses the impact on defense-in-depth and the impact on safety margins, as well as an evaluation of the impact on risk.

The WOG requests that the NRC complete the review of WCAP-15831-P, by May 30, 2003. Consistent with the Office of Nuclear Reactor Regulation, Office Instruction LIC-500, "Processing Request for Reviews of Topical Reports," the WOG requests that the NRC provide an estimate of the review hours, and target dates for any Request(s) for Additional Information and for completion of the Safety Evaluation for WCAP-15831-P.

OG-02-027
July 23, 2002

The reports transmitted herewith each bear a Westinghouse copyright notice. The NRC is permitted to make the number of copies of the information contained in these reports which are necessary for its internal use in connection with generic and plant-specific reviews and approvals as well as the issuance, denial, amendment, transfer, renewal, modification, suspension, revocation, or violation of a license, permit, order, or regulation subject to the requirements of 10 CFR 2.790 regarding restrictions on public disclosure to the extent such information has been identified as proprietary by Westinghouse, copyright protection notwithstanding. With respect to the non-proprietary versions of these reports, the NRC is permitted to make the number of copies beyond those necessary for its internal use which are necessary in order to have one copy available for public viewing in the appropriate docket files in the public document rooms as may be required by NRC regulations if the number of copies submitted is insufficient for this purpose. Copies made by the NRC must include the copyright notice in all instances and the proprietary notice if the original was identified as proprietary.

As this report, WCAP-15831-P, Rev. 0, contains information proprietary to Westinghouse Electric Company, it is being transmitted with affidavits signed by Westinghouse, the owner of the information. The affidavits set forth the basis on which the information be withheld from public disclosure by the Commission and addresses with specificity the considerations listed in paragraph (b)(4) of Section 2.790 of the Commission's regulations. Accordingly, it is respectfully requested that the information which is proprietary be withheld from public disclosure in accordance with 10CFR Section 2.790 of the Commission's regulations.

Correspondence with respect to the proprietary aspect of the Applications for Withholding or the supporting Westinghouse affidavits should reference CAW-02-1528 as appropriate and should be addressed to Mr. H.A. Sepp, Manager, Regulatory and Licensing Engineering, Westinghouse Electric Company, P. O. Box 355, Pittsburgh, PA 15230-0355.

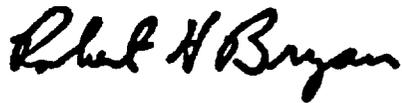
Invoices associated with the review of this WCAP should be addressed to:

Mr. Gordon Bischoff
Owners Group Program Manager
Westinghouse Electric Company
Mail Stop ECE 5-16
P.O. Box 355
Pittsburgh, PA 15230-0355

OG-02-027
July 23, 2002

If you require further information, please contact Ms. Sue Dederer in the Owners Group Program Management Office at 412-374-5387.

Very truly yours,

A handwritten signature in black ink that reads "Robert H. Bryan". The signature is written in a cursive style with a large, prominent initial "R".

Robert H. Bryan, Chairman
Westinghouse Owners Group

Enclosures

OG-02-027
July 23, 2002

cc: WOG Steering Committee (1L)
WOG Primary Representatives (1L)
WOG Licensing Subcommittee Representatives (1L)
B. Barron, Duke Energy (1L)
G. Shukla, USNRC OWFN 07 E1 (1L, 1E, 1R)
G. C. Bischoff, Westinghouse (1L)



Westinghouse Electric Company
Nuclear Services
P.O. Box 355
Pittsburgh, Pennsylvania 15230-0355
USA

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

Direct tel: (412) 374-5282
Direct fax: (412) 374-4011
e-mail: Sepp1ha@westinghouse.com

Attention: Chief, Information Management Branch
Division of Program Management
Policy Development and Analysis Staff

Our ref: CAW-02-1536

July 11, 2002

APPLICATION FOR WITHHOLDING PROPRIETARY
INFORMATION FROM PUBLIC DISCLOSURE

Subject: WCAP-15831-P, "WOG Risk-Informed ATWS Assessment and Licensing Implementation Process" (Proprietary); WCAP-15831-NP, "WOG Risk-Informed ATWS Assessment and Licensing Implementation Process" (Non-Proprietary)

The proprietary information for which withholding is being requested in the above-referenced report is further identified in Affidavit CAW-02-1536 signed by the owner of the proprietary information, Westinghouse Electric Company LLC. 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 2.790 of the Commission's regulations.

Accordingly, this letter authorizes the utilization of the accompanying Affidavit by Westinghouse Owners Group.

Correspondence with respect to the proprietary aspects of the application for withholding or the Westinghouse affidavit should reference this letter, CAW-02-1536 and should be addressed to the undersigned.

Very truly yours,

A handwritten signature in black ink, appearing to read 'H. A. Sepp'.

H. A. Sepp, Manager
Regulatory and Licensing Engineering

Enclosures

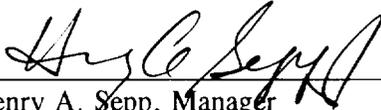
AFFIDAVIT

COMMONWEALTH OF PENNSYLVANIA:

SS

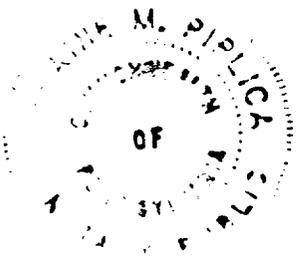
COUNTY OF ALLEGHENY:

Before me, the undersigned authority, personally appeared Henry A. Sepp, who, being by me duly sworn according to law, deposes and says that he is authorized to execute this Affidavit on behalf of Westinghouse Electric Company, LLC ("Westinghouse"), and that the averments of fact set forth in this Affidavit are true and correct to the best of his knowledge, information, and belief:


Henry A. Sepp, Manager
Regulatory and Licensing Engineering

Sworn to and subscribed
before me this 12th day
of July, (Year) 2002


Notary Public



Notarial Seal
Lorraine M. Piplica, Notary Public
Monroeville Boro, Allegheny County
My Commission Expires Dec. 14, 2003
Member, Pennsylvania Association of Notaries

Notarial Seal
Lorraine M. Piplica, Notary Public
Monroeville Boro, Allegheny County
My Commission Expires Dec. 14, 2003
Member, Pennsylvania Association of Notaries

- (1) I am Manager, Regulatory and Licensing Engineering, in the Nuclear Services, of the 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 rulemaking proceedings, and am authorized to apply for its withholding on behalf of Westinghouse Electric Company, LLC.
- (2) I am making this Affidavit in conformance with the provisions of 10 CFR Section 2.790 of the Commission’s regulations and in conjunction with the Westinghouse application for withholding accompanying this Affidavit.
- (3) I have personal knowledge of the criteria and procedures utilized by the Westinghouse Electric Company, LLC 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 2.790 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 constitutes Westinghouse policy and provides the rational basis required.

Under that system, information is held in confidence if it falls in one or more of the following areas of potential competitive advantage:

- (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.

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 which 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.
- (iii) The information is being transmitted to the Commission in confidence and, under the provisions of 10 CFR Section 2.790, it is to be received in confidence by the Commission.
 - (iv) 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.

- (v) The proprietary information sought to be withheld in this submittal is that which is appropriately marked in WCAP-15831-P, "WOG Risk-Informed ATWS Assessment and Licensing Implementation Process," (Proprietary), July 2002 on behalf of the Westinghouse Owners Group by Westinghouse Electric Co., being transmitted by the Westinghouse Owners Group letter and Application for Withholding Proprietary Information from Public Disclosure, Mr. Robert H. Bryan, Chairman, Westinghouse Owners Group to Document Control Desk, Attention Mr. Samuel J. Collins. The proprietary information as submitted for use by the Westinghouse Owners Group is applicable to other licensee submittals.

This information is part of that which will enable Westinghouse to:

- (a) Provide documentation of the response of reactor coolant system components to ATWS pressure conditions.
- (b) Provide documentation of the fault trees used in the program to assess reactor coolant system pressure relief availability.
- (c) Assist customers in the licensing and NRC approval of the plant design changes associated with this program.

Further this information has substantial commercial value as follows:

- (a) Westinghouse plans to sell these fault trees and the reactor coolant system pressure response assessment to support customer requests.
- (b) Westinghouse can sell support and defense of the technology to its customers in the licensing process.

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 calculation, evaluation, 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 for development of analytical techniques and data in support of this program.

Further the deponent sayeth not.

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PROPRIETARY INFORMATION NOTICE

Transmitted herewith are proprietary and/or non-proprietary versions of documents 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 2.790 of the Commission's regulations concerning the protection of proprietary information so submitted to the NRC, the information which is proprietary in the proprietary version is contained within brackets, and where the proprietary information has been deleted in the non-proprietary version, 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 2.790(b)(1).