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Your ref:
Our ref: LTR-RAC-09-82
November 19, 2009

APPLICATION FOR WITHHOLDING PROPRIETARY INFORMATION FROM PUBLIC DISCLOSURE

Subject: "Calculation Note Number CN-CRI-09-26, Revision 0 – October 29, 2009 (Proprietary)"

Reference: Westinghouse Letter from Gerard F. Couture to Director, Office of Nuclear Material Safety and Safeguards , LTR-RAC-09-81, Dated November 19, 2009

The Application for Withholding is submitted by Westinghouse Electric Company LLC (Westinghouse), pursuant to the provisions of Paragraph (b) (1) of Section 2.390 of the Commission's regulations. It contains commercial strategic information proprietary to Westinghouse and customarily held in confidence.

The proprietary material for which withholding is being requested is identified in the proprietary version of the subject report. In conformance with 10 CFR Section 2.390, an Affidavit accompanies this Application for Withholding, setting forth the basis on which the identified proprietary information may be withheld from public disclosure.

Accordingly, it is respectfully requested that the subject information which is proprietary to Westinghouse be withheld from public disclosure in accordance with 10 CFR Section 2.390 of the Commission's regulations.

Sincerely,

Cary D. Alstadt, Manager
Columbia Fuel Fabrication Facility
Westinghouse Electric Company LLC

cc:
Docket 70-1151 License SNM-1107

Attachments: LTR-RAC-09-81 SNM-1107 License Application Revision
CN-CRI-09-26 Revision 0 (Proprietary and Non-Proprietary Versions)

NMSS01
NMSS

cc: U. S. Nuclear Regulatory Commission
Attn. Mr. Richard Gibson Region II
Atlanta Federal Center
61 Forsyth Street, SW, Suite 23T85
Atlanta, Georgia 30303-3415

U.S. Nuclear Regulatory Commission
One White Flint North
11555 Rockville Pike
Rockville, Maryland 20852-2738
Mail Stop: EBB 2C40M
Attn: Christopher Ryder

AFFIDAVIT

(1) I am the Manager, Columbia Fuel Fabrication Facility in Nuclear Fuel, 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 Westinghouse submittals to NRC, 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 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 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.

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 may provide Westinghouse's competitors with information on the methods and procedures which Westinghouse uses to fulfill regulatory and licensing obligations. The extent to which such information is available to competitors may diminish the need of Westinghouse competitors to develop such methods and procedures without comparable investment of time and resources.

(c) Use by our competitors would put Westinghouse at a competitive disadvantage by reducing our competitor's expenditures of resources by allowing them to build upon or utilize methods and procedures developed by Westinghouse at great expense.

(iii) The information is being transmitted to the Commission in confidence and, under the provisions of 10 CFR Section 2.390, 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 and belief.

(v) The proprietary information sought to be withheld in this submittal is that which is transmitted in support of a SNM-1107 License Application Revision related to the secondary source rods (Proprietary), for submittal to the Commission, being transmitted by Westinghouse letter LTR-RAC-09-81 and this Application for Withholding Proprietary Information from Public Disclosure, to the Document Control Desk. The proprietary information as submitted by Westinghouse is that associated with Calculation Note Number CN-CRI-09-26 Revision 0. 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 address commercial strategies without commensurate expenses.

The calculation reveals specific methods of performing criticality safety calculations and specific information related to the attributes of the secondary source rods evaluated within the analysis. Release reveals aspects of future Westinghouse funded products of potential commercial value to Westinghouse. This criticality safety analysis and attributes of the secondary source rods are the result of an intensive Westinghouse effort and the expenditure of a considerable sum of money.

In order for competitors of Westinghouse to duplicate this information, similar efforts in analysis and in design of secondary source rods would have to be developed and a significant manpower effort, having the requisite talent and experience, would have to be expended.

The averments of fact set forth in this Affidavit are true and correct to the best of my knowledge, information, and belief:

Cary D. Alstadt, Manager

Columbia Fuel Fabrication Facility
Westinghouse Electric Company LLC

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 2.390 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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# ATTACHMENTS

## SNM-1107 License Application Revision Request LTR-RAC-09-81
## Calculation Note Number CN-CRI-09-26, Revision 0
## (Proprietary and Non-Proprietary Copies)

Westinghouse Electric Company LLC
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Our ref: LTR-RAC-09-81

Director, Office of Nuclear Material Safety and Safeguards
U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001
ATTN: Document Control Desk

November 19, 2009

SUBJECT: WESTINGHOUSE LICENSE SNM-1107 AMENDMENT REQUEST (DOCKET 70-1151)

Westinghouse Electric Company LLC (WEC) hereby requests an amendment to our Columbia Fuel Fabrication Facility (CFFF) SNM-1107 license application. This page change revision to our license application is requested to address a modification to Section 6.1.5.3 for validation requirements related to secondary source rods. The supportive calculation is also provided to assist NRC in the review of this amendment request. The change is identified by revision lines in the margin and impacts Section 6 of the SNM-1107 License Application. While designated Page Change 0.5 for internal Westinghouse tracking, this page change may be issued as Page Change 0.4 if approval of this amendment is obtained prior to the Page Changes previously submitted by Westinghouse Letter LTR-RAC-09-52-P, Dated September 21, 2009.

If you have any questions or comments regarding the details of this amendment request, please contact me at (803) 647-2045 or Mr. Sean Gough at (803) 647-3707.

Sincerely,

Gerard F. Couture, Manager,
Licensing and Regulatory Programs
Westinghouse Columbia Fuel Fabrication Facility

Docket 70-1151, License SNM-1107

Enclosures: SNM-1107 License Application Page Changes (7 Total)
Calculation Note CN-CRI-09-26 Revision 0 (Proprietary)

cc: U. S. Nuclear Regulatory Commission, Region II
Mr. Richard Gibson
Sam Nunn, Atlanta Federal Center
61 Forsyth Street, SW., Suite 23T85
Atlanta, GA 30303

U. S. Nuclear Regulatory Commission
Mr. Christopher Ryder, Project Manager
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Rockville, MD 20852

# WESTINGHOUSE ELECTRIC COMPANY
# NUCLEAR FUEL

# APPLICATION FOR RENEWAL
# OF A
# SPECIAL NUCLEAR MATERIAL LICENSE
# FOR THE
# COLUMBIA FUEL FABRICATION FACILITY
# COLUMBIA, SOUTH CAROLINA

## LICENSE NUMBER
## SNM-1107

**November 19, 2009 (Revision No. 0.5)**

## U.S. NUCLEAR REGULATORY COMMISSION
## DOCKET 70-1151

# REVISION RECORD

| REVISION NUMBER | DATE OF REVISION | PAGES REVISED | REVISION REASON |
|---|---|---|---|
| 0.0 | 27 Jun 07 | All | 2007 License Renewal. |
| 0.1 | 17 Mar 08 | ii, v, 102, 103, 104, 105, 106 & 107 | Modify Criticality Safety Requirement for Final Assembly Wash Pit |
| 0.2 | 30 Jun 08 | v, 11 | Change in Principal Officers |
| 0.3 | 10 Apr 09 | v, 123 | Emergency Plan Revision |
| 0.4 | TBD | iv, v, 1, 6, 7, 8 | CAA Expansion |
| 0.5 | TBD | ii, v, 104, 105, 106, 107 | Secondary Source Rods |

(1) Demonstration of the adequacy of the margin of safety for subcriticality by assuring that the margin is large compared to the uncertainty in the calculated value of $k_{EFF}$;

(2) Demonstration that the calculation of $k_{EFF}$ is based on a set of variables whose values lie in a range for which the methodology used to determine $k_{EFF}$ has been validated; or demonstration that trends in the bias support the extension of the methodology to areas outside the areas of applicability;

(3) A description of the specific validation method used, including reference to input data, area of applicability, and discussion of the applicable uncertainties; and

(4) A description of data outliers rejected shall be based on inconsistency of the data with known physical behavior, and not on statistical rejection methods alone.

The validation report documented in LTR-EHS-05-146, Revision 2, "Validation of the CSAS25 Sequence in SCALE-4.4 and the 238-Group ENDF/B-V Cross Section Library for Homogeneous Systems at the Westinghouse Columbia Fuel Fabrication Facility" demonstrates a practical example of the validation methodology used, and all future validations will be performed in a similar manner to comply with this methodology.

The validation report requirements described in this section above are not necessary for beryllium-antimony secondary source rod interactions with Westinghouse-based PWR fuel assemblies. Specific analysis has been conducted which demonstrates for all modeled dimensional and material variations, the reactivity of a Westinghouse PWR fuel assembly is reduced significantly by the presence of beryllium-antimony secondary source rods.

### 6.1.5.4 Computer Hardware and Software Control

(1) Validation and verification are completed, documented and independently reviewed before:

- Use of specific hardware and software systems utilizing specific cross section libraries;
- Use of analytical codes;
- Use of the methodology; and,
- Qualification and re-qualification of the codes.

(2) The configuration of the hardware platform used in support of software for criticality safety calculations is maintained such that only authorized system administrators are allowed to make system changes. System changes are conducted in accordance with an approved configuration control program that addresses both hardware and software qualification. System operability

verification is used for alerting users to any changes that might impact the operation of codes on the platform.

(3) Software on the platform that is designated for use in criticality safety calculations is compiled into working code versions, with executable files that are traceable with respect to length, time, and version.

(4) Modifications to hardware or software that are essential to the calculation process are followed by code operability verification. In such cases, selected calculations are performed to verify results are not substantially different to those from pre-modification analyses. Any deviations disclosed by code verification, that might alter the bias or uncertainty; require re-qualification of the code prior to continued use.

### 6.1.6 Technical Review

A qualified NCS technical reviewer (TR) performs an independent verification of all criticality safety evaluations and calculations that support limits specified in a safety analysis. The TR verifies that a proposed calculation geometry model and configuration adequately represents the system being analyzed. The TR also verifies that proposed material characterizations (e.g., density, concentration, etc.) adequately represent the system. The minimum required qualification for a TR will be identified in appropriate CFFF procedures.

The verification of such evaluations and calculations uses one (or more) of the following processes:

(1) Verification using an alternate computer code and/or hand calculations.

(2) Verification by performing a comparison with prior results for a similar, approved calculation and/or a similar configuration.

(3) Verification by using a technical verification checklist, including checks of the computer code used, and evaluation of code input and output.

(4) Verification using a custom method, including detailed information that describes the custom methodology.

### 6.1.7 Posting of Limits and Controls

Posting includes placement of signs and/or physical identification (e.g., using tape, paint, etc.) of floors, to designate approved work and storage areas. Postings provide information and/or specific precautions to supplement operating procedures.

Appropriate postings are placed at the entrance to work and holding areas (e.g. equipment, rooms, etc.) where fissile material is processed or stored. Criticality safety precautions or prohibitions (e.g., approved moderator limits, approved fire-fighting methods, etc.) are posted at entrances to affected areas. Storage postings are conspicuously located at entrances to holding areas (i.e., at such locations that it would be unlikely that personnel could enter an area without seeing the postings); and, include (as applicable) information such as material type, container identification, number of containers allowed, controlled parameter limits, and spacing requirements.

Postings are approved and issued by the Nuclear Criticality Safety Function. First level managers are responsible for assuring that their cognizant personnel are aware of, and understand, posted information.

### 6.1.8 Criticality Accident Alarm System (CAAS)

The CAAS initiates immediate evacuation of the facility in response to detection of a potential criticality accident. The CAAS, and the proper response protocol, is detailed in the CFFF Emergency Plan and Emergency Procedures.

The CAAS radiation monitoring detectors are located to pursue conformance to the guidance of ANSI/ANS-8.3(1997) (as modified by Regulatory Guide 3.71), and compliance with 10CFR70.24. Location and spacing of the detectors are chosen to minimize the effect of shielding by massive equipment or materials of construction. Spacing is reduced where high-density materials (e.g., concrete, cinder block, brick, etc.) are located between a potential accident source and a detector. Low-density materials (e.g., wooden construction walls, non-load walls, office panel walls, metal-corrugated panels, doors, plaster, etc.) are disregarded when determining CAAS spacing.

If the CAAS is out-of-service, within one hour the CFFF will suspend movement and processing of fissile material in the coverage area until the process is brought to a safe shutdown condition. Movement of fissile material necessary to establish or maintain a safe shutdown condition may continue. Movement and processing of fissile material will not resume unless the CAAS is returned to service, or continuously attended portable detection instruments, capable of detection and alarm, are provided to monitor the area normally covered by the installed CAAS. These actions will be directed and enforced by the plant emergency response team. The portable detection and alarm devices shall be of a type pre-approved for this use by the Nuclear Criticality Safety Function. Once the installed CAAS is returned to service, the monitoring provided by the portable devices may be discontinued. Routine testing, calibration, and/or maintenance of the CAAS for up to four hours is permitted without suspension of fissile material movement or processing.

Employees and visitors are trained in responding to the alarm signal, which is a continuous warbling siren. An ongoing aspect of this training is a weekly test of the signal on all working shifts.

### 6.1.9 Audits and Assessments

Audits and assessments are conducted to compare established NCS standards to CFFF performance. These audits and assessments address the guidelines of ANSI/ANS-8-19(1996) and are performed as described in Chapter 3.0, Section 3.6 of this License Application.

Program assessments take the form of program audits. Specific portions of the NCS program evaluated during a particular assessment are based on previous internal audit findings, external audit findings, NRC inspection activities, current operating conditions, and time since last assessment. Program audits schedules are developed annually, with the complete NCS program assessed on a triennial frequency. Results of the assessments are documented and maintained for NRC Staff review and inspection.

Process assessments take the form of compliance audits that evaluate implementation of NCS requirements (e.g., conformance to the applicable CSE container spacing, following procedures and postings, etc.) for CFFF operations. The frequency of these audits is based on previous internal audit findings, NRC inspection results, incidents (those reported and those requiring notification), configuration management activities, and the time since last assessment. Formal compliance audit schedules are developed annually, with one third of the fissile material processing areas described in the ISA audited annually, so that the complete set of operations making up the CFFF ISA are assessed on a triennial frequency. Results of the assessments are documented and maintained for NRC Staff review and inspection.

Facility walkthrough assessments are conducted for each of the fissile material processing areas described in the ISA. These assessments are performed by the Nuclear Criticality Safety Function with a focus on field compliance with established NCS controls. These assessments are based on the criticality safety risk defined in the ISA and performed periodically so that the complete set of operations making up the CFFF ISA are assessed on a quarterly (higher risk) or semiannual (lower risk) frequency. Results of the assessments are documented and maintained for NRC Staff review and inspection.

### 6.1.10 Procedures, Training, and Qualification

At the CFFF, procedures, training and qualification are integrated into a combined process to assure that safety and safeguards activities are being conducted by trained and qualified individuals, in accordance with Westinghouse policies and in accordance with commitments to Regulatory Agencies. This process is described in Chapter 3.0, Section 3.4 of this License Application, and meets the guidelines of ANSI/ANS-8.19(1996) and ANSI/ANS-8.20(1991), as they relate to training, procedures, and the requirement that no single, inadvertent departure from a procedure could cause an inadvertent criticality.