

MAY 20 2011L-2011-154
10 CFR 50.90
10 CFR 2.390

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D. C. 20555-0001

Re: Turkey Point Units 3 and 4
Docket Nos. 50-250 and 50-251
Response to NRC Request for Additional Information Regarding
Fuel Storage Criticality Analysis License Amendment Request No. 207

References:

- (1) M. Kiley (FPL) to U. S. Nuclear Regulatory Commission (L-2010-169), "License Amendment Request No. 207 Fuel Storage Criticality Analysis," Accession No. ML102220022, August 5, 2010.
- (2) M. Kiley (FPL) to U. S. Nuclear Regulatory Commission (L-2011-032), "Supplement 1 to License Amendment Request No. 207 Fuel Storage Criticality Analysis," Accession No. ML110560335, February 22, 2011.
- (3) DSS-ISG-2010-01, Staff Guidance Regarding the Nuclear Criticality Safety Analysis for Spent Fuel Pools.
- (4) Email from J. Paige (NRC) to T. Abbatiello (FPL), "Turkey Point Fuel Storage Criticality Analysis LAR - Requests for Additional Information," Accession No. ML11119A000, April 28, 2011.

By letter L-2010-169 dated August 5, 2010 [Reference 1], Florida Power and Light Company (FPL) requested to amend Renewed Facility Operating Licenses DPR-31 and DPR-41 and revise the Turkey Point Units 3 and 4 Technical Specifications (TS). The proposed amendments will revise TS 5.5.1 Fuel Storage – Criticality, to include new spent fuel storage patterns that account for both the increase in fuel maximum enrichment from 4.5 wt% U-235 to 5.0 wt% U-235 and the impact on the fuel of higher power operation proposed under the Extended Power Uprate (EPU) project. Although the fuel storage has been analyzed at the higher fuel enrichment in the new criticality analysis, the fuel enrichment limit of 4.5 wt% U-235 specified in TS 5.5.1 will not be changed under this license amendment request (LAR). On February 22, 2011, LAR No. 207 was supplemented by letter L-2011-032 [Reference 2] to provide a revised fuel storage criticality analysis that addresses the NRC Interim Staff Guidance (ISG) DSS-ISG-2010-01 [Reference 3].

On April 28, 2011, FPL received a Request for Additional Information (RAI) via email from the NRC Project Manager (PM) regarding the fuel storage criticality analysis associated with LAR No. 207 [Reference 4]. The RAI contained seven questions from the NRC staff in the Reactor Systems Branch (SRXB) required to support their review of the LAR. The seven RAI questions and associated FPL responses are documented in Attachment 1 to this letter.

Attachment 2 contains the application for withholding the proprietary information contained in Attachment 1 from public disclosure. As Attachment 1 contains information proprietary to Westinghouse Electric Company, LLC (Westinghouse), it is supported by an affidavit signed by Westinghouse, the owner of the information. The affidavit sets forth the basis for which

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the information may be withheld from public disclosure by the Commission and addresses with specificity the considerations listed in paragraph (b)(4) of §2.390 of the Commission's regulations. Accordingly, it is respectfully requested that the information which is proprietary to Westinghouse be withheld from public disclosure in accordance with 10 CFR 2.390 of the Commission's regulations.

Correspondence with respect to the copyright or proprietary aspects of items in response to RAI questions 2, 3, 6, or 7 in Attachment 1 of this letter or the supporting Westinghouse affidavit should reference CAW-11-3158 and should be addressed to J. A. Gresham, Manager, Regulatory Compliance and Plant Licensing, Westinghouse Electric Company LLC, Suite 428, 1000 Westinghouse Drive, Cranberry Township, PA 16066.

In accordance with 10 CFR 50.91(b)(1), a copy of this letter is being forwarded to the State Designee of Florida.

This submittal does not alter the significant hazards consideration or the environmental assessment previously submitted by FPL letter L-2011-032 [Reference 2].

This submittal contains no new commitments and no revisions to existing commitments.

Should you have any questions regarding this submittal, please contact Mr. Robert J. Tomonto, Licensing Manager, at (305) 246-7327.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on May 20, 2011.

Very truly yours,



Michael Kiley
Site Vice President
Turkey Point Nuclear Plant

Attachments

cc: USNRC Regional Administrator, Region II
USNRC Project Manager, Turkey Point Nuclear Plant
USNRC Resident Inspector, Turkey Point Nuclear Plant
Mr. W. A. Passetti, Florida Department of Health (w/o Attachments)

Turkey Point Units 3 and 4

RESPONSE TO NRC RAI REGARDING EPU LAR NO. 207
FUEL STORAGE CRITICALITY ANALYSIS

ATTACHMENT 1

Response to Request for Additional Information

The following information is provided by Florida Power and Light Company (FPL) in response to the U. S. Nuclear Regulatory Commission's (NRC) Request for Additional Information (RAI). This information was requested to support License Amendment Request (LAR) No. 207, Fuel Storage Criticality Analysis, for Turkey Point Nuclear Plant (PTN) Units 3 and 4 that was submitted to the NRC by FPL letter L-2010-169 on August 5, 2010 [Reference 1] and supplemented by FPL letter L-2011-032 on February 22, 2011 [Reference 2].

On April 28, 2011, FPL received an RAI via email from the NRC Project Manager regarding the fuel storage criticality analysis associated with LAR No. 207 [Reference 3]. The RAI contained seven questions from the NRC staff in the Reactor Systems Branch (SRXB) required to support their review of the LAR. These seven RAI questions and associated FPL responses are documented below.

Note: Responses to RAI questions 2, 3, 6, and 7 contain information proprietary to Westinghouse.

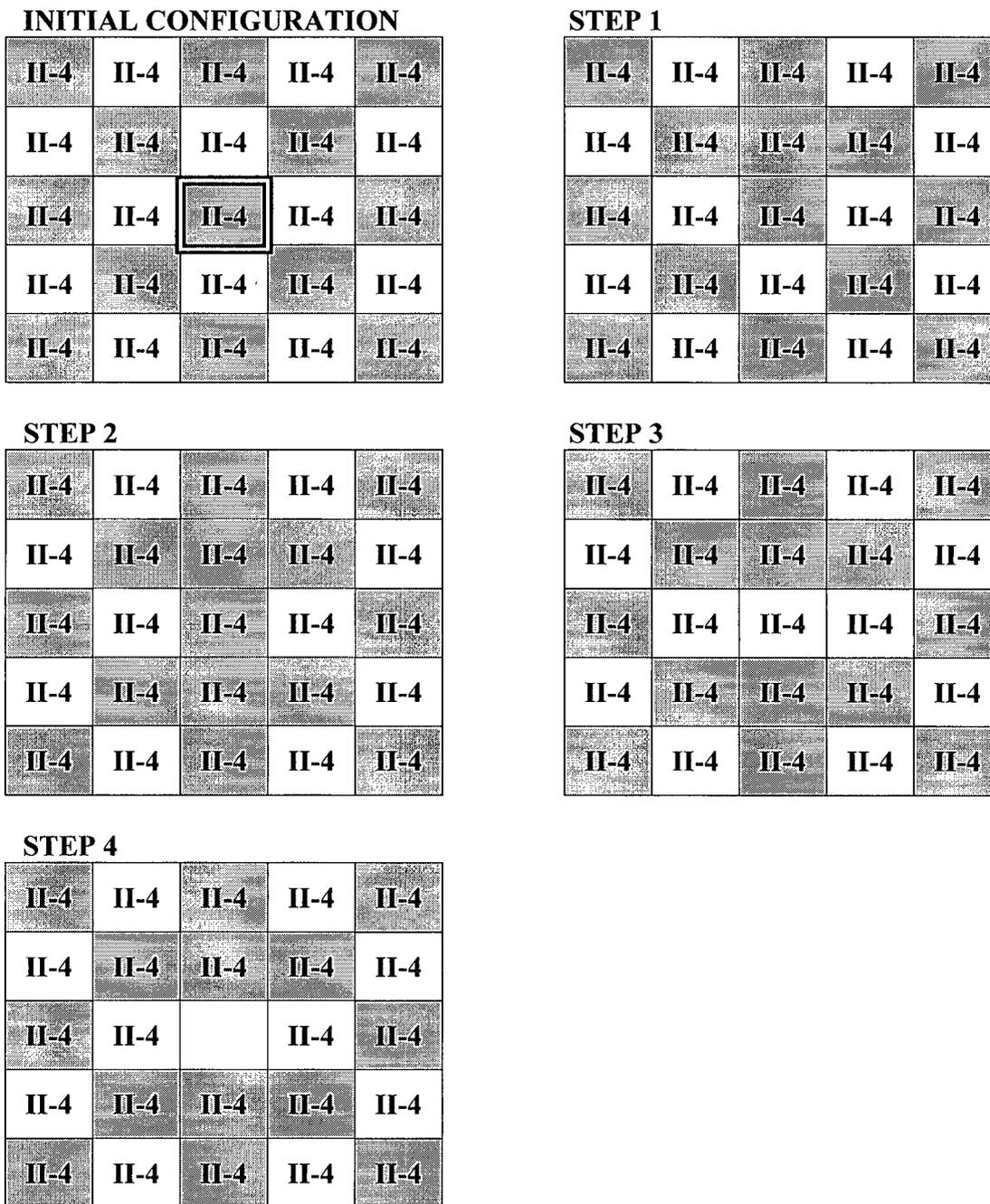
- 1. On page 4 of the license amendment request, the licensee stated that “Metamic inserts are installed into selected spent fuel pit rack cells and establish allowed spent fuel storage configurations based on assembly initial enrichment, burnup and post irradiation cooling times.” Explain how it is determined which spent fuel pool rack cells receive Metamic inserts?**

Metamic panels are inserted into the spent fuel pool rack cells to fulfill the requirement that every 2x2 array in the spent fuel pool is in one of the allowable configurations of the criticality analysis. The allowable configurations are noted on pages 5-2 and 5-3 of WCAP-17094-P Revision 3, as well as in the proposed Technical Specification pages included with the License Amendment Request.

The initial implementation process is to re-arrange the fuel assemblies and Metamic panels in the spent fuel pool to make it compliant with the allowable configurations of the new criticality analysis, while meeting the requirements of the current Technical Specifications at all times. Subsequent to the initial implementation, all spent fuel pool move plans will be prepared and approved in accordance with procedures that require that the spent fuel pool remain in compliance with the criticality requirements after every move of a fuel assembly or Metamic panel (or any other item).

To further illustrate, Figure 1-1 outlines the process to remove a fuel assembly that is in a location with a Metamic panel. The initial configuration highlights that fuel assembly, which is in the center of a 5X5 array of assemblies of Category II-4 fuel. That fuel category requires that every 2x2 has two Metamic panels (shaded cells have Metamic panels inserted). Step 1 in the sequence notes that a Metamic panel has been inserted into the location in the second row, third column, and Step 2 notes that a Metamic panel has been inserted into the location in the fourth row, third column. Those two insertions are necessary to ensure that all 2x2 arrays remain in an allowable configuration after the panel is removed from the center location, and that is noted in Step 3. Finally, Step 4 notes that the central fuel assembly has been removed. As noted in this example, the Metamic panels are inserted into spent fuel pool rack cells as needed to remain compliant with the allowable configurations of the criticality analysis.

Figure 1.1 – Illustration of Fuel Assembly Removal



4. **On page 4-14, the licensee states that, “FPL will ensure that the average soluble boron concentration seen by each assembly is less than 1000 ppm.” How will this soluble boron concentration be controlled?**

The standard FPL reload analysis process has already been enhanced to include a requirement to confirm that the key fuel criticality analysis parameters are met. One of those parameters is the average soluble boron concentration seen by each fuel assembly.

Prior to off-loading fuel assemblies from the reactor core into the spent fuel pool, fuel assembly parameters are evaluated to ensure that each fuel assembly is properly categorized. That categorization is based on the fuel assembly’s initial enrichment, burnup, and compliance with the key fuel criticality analysis parameters. Therefore, the standard FPL reload analysis process validates that the average soluble boron concentration seen by each fuel assembly during its life in the core remains below the value of 1000 ppm assumed in the criticality analysis.

5. **On page 4-35, the licensee states that the boron dilution analysis has previously been performed that showed 500 ppm of soluble boron is acceptable. The NRC staff requests that you provide this analysis.**

The soluble boron credit for the spent fuel pool and fresh fuel rack criticality analyses was submitted to the NRC via FPL letter L-99-176 on November 30, 1999 [Reference 5].

References

1. M. Kiley (FPL) to U. S. Nuclear Regulatory Commission (L-2010-169), "License Amendment Request No. 207 Fuel Storage Criticality Analysis," Accession No. ML102220022, August 5, 2010.
2. M. Kiley (FPL) to U. S. Nuclear Regulatory Commission (L-2011-032), "Supplement 1 to License Amendment Request No. 207 Fuel Storage Criticality Analysis," Accession No. ML110560335, February 22, 2011.
3. Email from J. Paige (NRC) to T. Abbatiello (FPL), "Turkey Point Fuel Storage Criticality Analysis LAR - Requests for Additional Information," Accession No. ML11119A000, April 28, 2011.
4. NUREG/CR-6665 (ORNL/TM-1999/303), Review and Prioritization of Technical Issues Related to Burnup Credit for LWR Fuel, Oak Ridge National Laboratory, February 2000.
5. R. J. Hovey (FPL) to U. S. Nuclear Regulatory Commission (L-99-176), "Soluble Boron Credit for Spent Fuel Pool and Fresh Fuel Rack Criticality Analyses," Accession No. ML993410153, November 30, 1999.

Turkey Point Units 3 and 4
RESPONSE TO NRC RAI REGARDING EPU LAR NO. 207
FUEL STORAGE CRITICALITY ANALYSIS

ATTACHMENT 2

Westinghouse Affidavit for Attachment 1
May 18, 2011

This coversheet plus 8 pages



Westinghouse Electric Company
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USA

U.S. Nuclear Regulatory Commission
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e-mail: greshaja@westinghouse.com
Proj letter: NF-FP-11-126

CAW-11-3158

May 18, 2011

APPLICATION FOR WITHHOLDING PROPRIETARY
INFORMATION FROM PUBLIC DISCLOSURE

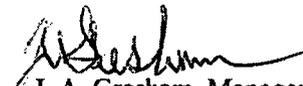
Subject: NF-FP-11-126 P-Attachment, "Responses to NRC Request for Additional Information on WCAP-17094, Revision 3, 'Turkey Point Units 3 and 4 New Fuel Storage Rack and Spent Fuel Pool Criticality Analysis'" (Proprietary)

The proprietary information for which withholding is being requested in the above-referenced report is further identified in Affidavit CAW-11-3158 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 2.390 of the Commission's regulations.

Accordingly, this letter authorizes the utilization of the accompanying affidavit by Florida Power & Light.

Correspondence with respect to the proprietary aspects of the application for withholding or the Westinghouse affidavit should reference this letter, CAW-11-3158, and should be addressed to J. A. Gresham, Manager, Regulatory Compliance, Westinghouse Electric Company LLC, Suite 428, 1000 Westinghouse Drive, Cranberry Township, Pennsylvania 16066.

Very truly yours,


J. A. Gresham, Manager
Regulatory Compliance

Enclosures

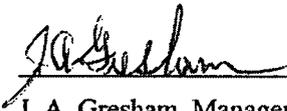
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COMMONWEALTH OF PENNSYLVANIA:

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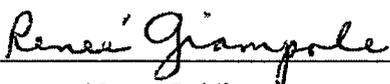
COUNTY OF BUTLER:

Before me, the undersigned authority, personally appeared J. A. Gresham, 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:

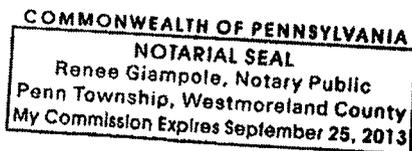


J. A. Gresham, Manager
Regulatory Compliance

Sworn to and subscribed before me
this 18th day of May 2011



Notary Public



- (1) I am Manager, Regulatory Compliance, in Nuclear Services, 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 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 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 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 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.
- (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 appropriately marked in NF-FP-11-126 P-Attachment, "Responses to NRC Request for Additional Information on WCAP-17094, Revision 3, 'Turkey Point Units 3 and 4 New Fuel Storage Rack and Spent Fuel Pool Criticality Analysis'" (Proprietary), for submittal to the Commission, being transmitted by Florida Power & Light letter and Application for Withholding Proprietary Information from Public Disclosure, to the Document Control Desk. The proprietary information as submitted by Westinghouse is that associated with Westinghouse's request for NRC approval of WCAP-17094, Revision 3, "Turkey Point Units 3 and 4 New Fuel Storage Rack and Spent Fuel Pool Criticality Analysis," and may be used only for that purpose.

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

- (a) Obtain NRC approval of WCAP-17094, Revision 3, "Turkey Point Units 3 and 4 New Fuel Storage Rack and Spent Fuel Pool Criticality Analysis."
- (b) Provide results of customer specific calculations.
- (c) Provide licensing support for customer submittals.

Further this information has substantial commercial value as follows:

- (a) Westinghouse plans to sell the use of this information to its customers for purposes of meeting NRC requirements for licensing documentation associated with Spent Fuel Criticality submittals supporting EPU.
- (b) Westinghouse can sell support and defense of the use of the technology to its customer in licensing process.
- (c) 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 calculations 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/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).

Copyright Notice

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 2.390 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 room in Washington, DC and in local 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.

