



William J. Cahill, Jr.  
Chief Nuclear Officer

August 21, 1996  
IPN-96-090

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

Subject: Indian Point 3 Nuclear Power Plant  
Docket No. 50-286  
**Response To Request For Additional Information Regarding  
Instrumentation and Controls Surveillance Extension**

- References:
1. NYPA Letter (IPN-96-067), William J. Cahill, Jr. to NRC, dated June 21, 1996, "Proposed Changes to Technical Specifications Regarding Surveillance Intervals for Instrument Channels to Accommodate a 24 Month Operating Cycle."
  2. NRC Letter, George F. Wunder to William J. Cahill, Jr., dated July 26, 1996, "Request for Additional Information Regarding Instrumentation and Controls Surveillance Extension (TAC M95867)."

Dear Sir:

This letter provides the New York Power Authority response to NRC questions on our application for amendment (Reference 1) to Table 4.1-1 of the Indian Point 3 Technical Specifications to accommodate a 24-month operating cycle. The application for amendment proposed to change the surveillance intervals for four instrument channels (Accumulator Level and Pressure, Pressurizer Pressure, and Volume Control Tank Level). This letter provides additional information regarding the drift analysis methodology, the probability/confidence levels used for Volume Control Tank level, the basis for the drift value used for Volume Control Tank level, and the purpose of channels checks.

Attachment I is the Authority's response to the four questions transmitted by Reference 2. Westinghouse Electric Corporation asserts that portions of the information requested in the first two questions contain proprietary information. Therefore, Attachments II and III provide the proprietary and non-proprietary versions of this information, respectively. Attachment II (proprietary version) includes a Westinghouse authorization letter (CAW-96-1001), accompanying affidavit, Proprietary Information Notice, and Copyright Notice. The affidavit sets forth the basis on which the information may be withheld from public disclosure by the Commission and addresses the considerations listed in 10 CFR 2.790(b)(4). Accordingly, it is

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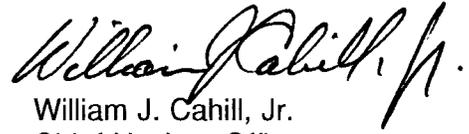
respectfully requested that the information which is proprietary to Westinghouse be withheld from public disclosure in accordance with the Commission's regulations. Correspondence with respect to the copyright or proprietary aspects of the information contained in Attachment II or the supporting Westinghouse Affidavit should reference CAW-96-1001 and should be addressed to:

N. J. Liparulo, Manager of Regulatory and Engineering Networks  
Westinghouse Electric Corporation  
P. O. Box 355  
Pittsburgh, Pennsylvania 15230-0355

In accordance with 10 CFR 50.91, a copy of this application and the attachment not withheld from public disclosure are being submitted to the designated New York State official.

If you have any questions, please contact Mr. K. Peters.

Very truly yours,



William J. Cahill, Jr.  
Chief Nuclear Officer

cc: U.S. Nuclear Regulatory Commission  
475 Allendale Road  
King of Prussia, PA 19406

Resident Inspector's Office  
Indian Point Unit 3  
U.S. Nuclear Regulatory Commission  
P.O. Box 337  
Buchanan, NY 10511

Mr. William Valentino  
New York State Energy Research  
and Development Authority  
2 Rockefeller Plaza  
Albany, NY 12223

Mr. George F. Wunder, Project Manager  
Project Directorate I-1  
Division of Reactor Projects I/II  
U.S. Nuclear Regulatory Commission  
Mail Stop 14 B2  
Washington, DC 20555

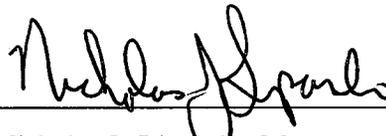
AFFIDAVIT

COMMONWEALTH OF PENNSYLVANIA:

SS

COUNTY OF ALLEGHENY:

Before me, the undersigned authority, personally appeared Nicholas J. Liparulo, 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 Corporation ("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:



Nicholas J. Liparulo, Manager  
Regulatory and Engineering Networks

Sworn to and subscribed  
before me this 9<sup>th</sup> day  
of August, 1996



Notary Public

Notarial Seal  
Denise K. Henderson, Notary Public  
Monroeville Boro, Allegheny County  
My Commission Expires Oct. 28, 1996  
Member, Pennsylvania Association of Notaries

- (1) I am Manager, Regulatory and Engineering Networks, in the Nuclear Services Division, of the Westinghouse Electric Corporation 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 the Westinghouse Energy Systems Business Unit.
- (2) I am making this Affidavit in conformance with the provisions of 10CFR 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 Energy Systems Business Unit 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 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 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 10CFR 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 and belief.
- (v) The proprietary information sought to be withheld in this submittal is that which is appropriately marked in "Responses to NRC Request for Additional Information Regarding Instrumentation and Controls Surveillance Extension" (TAC 95867), (Proprietary), for Indian Point Unit 3, being transmitted by the New York Power Authority letter and Application for Withholding Proprietary Information from Public Disclosure, to the Document Control Desk; Attention Mr. William T. Russell. The proprietary information as submitted for use by the New York Power Authority for Indian Point Unit 3 is expected to be applicable in other licensee submittals in response to certain NRC requirements specified in Generic Letter 91-04 for the

extension of surveillance intervals for plant instrumentation to permit increased cycle length.

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

- (a) Provide documentation of the methods for determining instrumentation drift and channel uncertainties.
- (b) Provide the specific design information related to the parameters that are considered for each safety function.
- (c) Assist the customer to obtain NRC approval.

Further this information has substantial commercial value as follows:

- (a) Westinghouse plans to sell the use of similar information to its customers for purposes of meeting NRC requirements for licensing documentation.
- (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 developing testing and analytical methods and performing tests.

Further the deponent sayeth not.

**PROP**

### 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 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) contained within parentheses 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).

## 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 2.790 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 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.

ATTACHMENT I TO IPN-96-090  
NYPA RESPONSE TO NRC REQUEST FOR ADDITIONAL INFORMATION  
REGARDING INSTRUMENTATION AND CONTROLS SURVEILLANCE EXTENSION

Question 1:

The submittal states that the drift analysis was based on a Westinghouse methodology, which was approved by the staff for another docket. Please provide this Westinghouse methodology or a reference (WCAP No. etc).

Response to Question 1:

The submittal states (Attachment 2, page 2) " An assessment of past instrument drift was performed using the Westinghouse Drift Evaluation Methodology (Reference 2) which is consistent with the guidance of Generic Letter 91-04. The NRC has reviewed the Westinghouse methodology on other dockets and has approved at least one application." To clarify the submittal so that it addresses the question, the following is presented: The application the NRC approved was an extension of surveillance intervals to accommodate a 24 month cycle on Docket No. 50-247 where the assessment of past instrument drift was performed using the Westinghouse Drift Evaluation Methodology. The methodology has been enhanced since that time and continues to be enhanced. Many enhancements have been discussed over the last year during the NRC staff review of proposed extension of surveillance intervals to accommodate a 24 month cycle on Docket No. 50-423. An additional and proprietary discussion of the methodology used at Indian Point 3 is presented in Attachment II.

Question 2:

The submittal indicates that a 75/75 probability / confidence level is being used for Volume Control Tank Level functions. A paper presented at an ISA 67.04 meeting in October 1992 and previous staff positions have described 95/75 probability / confidence level and not 75/75. Please provide adequate justification for lower probability or adjust it to 95 level.

Response to Question 2:

The drift evaluations employ a "graded" approach, whereby the probability and confidence level is varied in accordance with the safety significance of the function. There is no consistent industry practice, nor are there explicit NRC requirements, regarding the detailed application of a graded approach. However, in October 1992 a presentation was made at the ISA 67.04 meeting and provided some general guidelines on a possible approach to grading. This discussion included the specification of three setpoint groups: Group A (95/95 calculations with all uncertainty terms addressed), Group B (95/high confidence level calculations with fewer uncertainty terms addressed), and Group C (unspecified probability/confidence level with not all uncertainty terms addressed). In addition, general guidance for categorization among these groups was provided. The original submittal noted that Westinghouse implementation of the graded approach used, as a basis, "For any functions that are considered to be miscellaneous control functions, a conservative engineering judgement evaluation is performed for drift without the use of a rigorous statistical approach." The application of this methodology to the Volume Control Tank (VCT) level was identified "There was insufficient input data for a rigorous drift evaluation. For VCT Level,

conservative engineering judgement was used to specify a drift, based on the absence of historical data, and consistent with the categorization of the VCT Level function as 75/75 (or less) since it is a non-critical control system. The result was  $\pm 2.0\%$  span, random."

Question 3:

The submittal states, "An evaluation of past volume control tank level transmitter performance could not be performed using the Westinghouse Drift Evaluation Methodology described above because there was insufficient data since the instruments were recently replaced." On page 4 of 12 it is stated, "For VCT Level, conservative engineering judgement was used to specify a drift, based on absence of historical data..." It was not clear that in the absence of any historical data, how the specified value of the drift value was established to be time independent. Please provide a justification for this conservative value and explain how its time independence was established?

Response to Question 3:

The actual drift, based on a single cycle of operation for the installed VCT level transmitter, averaged approximately 0.7% span. This value was approximately tripled to generate a 30 month drift allowance of  $\pm 2.0\%$  span to serve as input to loop accuracy/setpoint calculations. Since a rigorous statistical evaluation was not possible due to a lack of data, no definitive projections on time dependence were possible. However, the  $\pm 2.0\%$  allowance is judged to be reasonable, especially considering that there are no safety analysis assumptions or critical control setpoints associated with this function, and if a statistical evaluation were performed, a 75/75 (or engineering judgement) level would be recommended. The actual transmitter drift will be monitored, in conjunction with the NYPA drift monitoring program, based on 24 month fuel cycle operating experience with this transmitter, when obtained. If required, the current drift allowance used in the loop accuracy/setpoint calculations will be updated, based on the results of the drift monitoring.

Question 4:

The submittal states, "For indicators, vendor literature does not identify any significant time dependent uncertainties. Further assurances of indicator operability is typically (except for VCT level) provided by channel checks performed each shift." Assuming all indicators are of the same model and make, all may drift in one direction. In this situation channel checks may detect only the relative difference between the channels but will not detect a systematic drift (if any) for all channels. Please discuss how the channel check can be used to determine channel systematic drift or how other methods will be used to allow IP3 TS to cope with this concern.

Response to Question 4:

Channel checks are not intended to be used to determine channel drift at IP3. Channel checks are performed in accordance with Technical Specification requirements and are defined in TS Section 1.9, Instrumentation Surveillance; "A qualitative determination of

acceptable operability by observation of channel behavior during operation. This determination shall include, where possible, comparison of the channel with other independent channels measuring the same variable."

The channel checks are a qualitative assessment of instrument operability and are intended to detect gross failures and abnormalities between channels.

In addition, while indicators may be the same make and model, each channel is independent and the probability of all channels drifting the same amount in the same direction is small. Statistical analysis performed at IP3 for indicators has shown drift to be a random uncertainty. Loop accuracy calculations for indicators typically include a rack drift allowance, indicator accuracy, readability and calibration tolerance in addition to other normal and harsh channel uncertainties.

Indicators for applicable instrument channels are also included in the Drift Monitoring Program where actual performance is monitored against the drift allowances used in the loop accuracy calculations to ensure the drift allowances used are consistent with the measured drift.

ATTACHMENT III TO IPN-96-090

WESTINGHOUSE RESPONSES TO  
NRC REQUEST FOR ADDITIONAL INFORMATION REGARDING  
INSTRUMENTATION AND CONTROLS SURVEILLANCE EXTENSION  
**NON-PROPRIETARY VERSION**

NEW YORK POWER AUTHORITY  
INDIAN POINT 3 NUCLEAR POWER PLANT  
DOCKET NO. 50-286  
DPR-64

RESPONSES TO NRC REQUEST FOR ADDITIONAL INFORMATION REGARDING  
INSTRUMENTATION AND CONTROLS SURVEILLANCE EXTENSION (TAC 95867)

Westinghouse Drift Evaluation Methodology

In support of the extension of fuel cycles to 24 months, Enclosure 2 to Generic Letter 91-04 requires that plant instrument drift be reviewed for consistency with setpoint uncertainty calculations under the extended operating cycle. Westinghouse has developed a process to accomplish this for instrumentation drift for a 24 month fuel cycle.

a,c

WESTINGHOUSE NON-PROPRIETARY CLASS 3

a, c



### Westinghouse Graded Approach

The drift evaluations employ a "graded" approach, whereby the probability and confidence level is varied in accordance with the safety significance of the function. There is no consistent industry practice, nor are there explicit NRC requirements, regarding the detailed application of a graded approach.

a,c

ATTACHMENT II TO IPN-96-090

WESTINGHOUSE RESPONSES TO  
NRC REQUEST FOR ADDITIONAL INFORMATION REGARDING  
INSTRUMENTATION AND CONTROLS SURVEILLANCE EXTENSION

**PROPRIETARY VERSION**

NEW YORK POWER AUTHORITY  
INDIAN POINT 3 NUCLEAR POWER PLANT  
DOCKET NO. 50-286  
DPR-64