

**Enclosure 1B**

**Florida Power and Light Company**  
**Turkey Point Units 3 and 4**

**Supplemental Licensing Input for Deletion of**  
**Steam / Feedwater Flow Mismatch Reactor Trip**  
**WNA-LI-00049-FPL-NP**

**Westinghouse Non-Proprietary Class 3**

**Florida Power & Light  
Turkey Point  
Units 3 & 4**

**Supplemental Licensing Input for  
Deletion of Steam / Feedwater Flow  
Mismatch Reactor Trip**

**WNA-LI-00049-FPL-NP**

**Revision 0**

**July 2005**



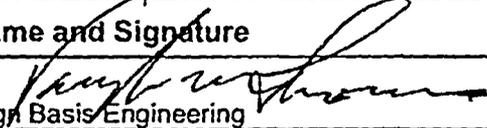
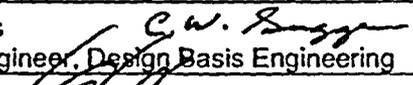
# Florida Power & Light Turkey Point Units 3 & 4

## Supplemental Licensing Input for Deletion of Steam / Feedwater Flow Mismatch Reactor Trip

WNA-LI-00049-FPL-NP

Revision 0  
July 2005

### APPROVALS

Function	Name and Signature	Date
Authors	V. M. Thomas Principal Engineer, Design Basis Engineering 	7/15/2005
Reviewed	C. W. Suggs Principal Engineer, Design Basis Engineering 	7/15/2005
Approved	D. A. Jarosh Manager, Design Basis Engineering 	7/15/2005

Westinghouse Electric Company, LLC  
P.O. Box 355  
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**LIST OF CONTRIBUTORS/REVIEWERS**

Name	Date
E.Loizito, FPL	7/2005
W.Busch, FPL	7/2005
D.Tomaszewski, FPL	7/2005

**REVISION HISTORY**

**RECORD OF CHANGES**

Revision	Revision Made By	Description	Date
0	V. M. Thomas	Initial Issue	07/15/05

**DOCUMENT TRACEABILITY & COMPLIANCE**

Created to Support the Following Document(s)	Document Number	Revision
None		

**DETAILED RECORD OF CHANGES**

Revision	Date
<b>Description:</b> Rev 0: Initial issue.	7/2005

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## ACRONYMS AND TRADEMARKS

The following abbreviations and acronyms are defined to allow an understanding of their use within this document.

Acronyms	Definition
FPL	Florida Power & Light
MSS	Median Signal Selection
PTN	Plant Turkey Point
SG	Steam Generator
RPS	Reactor Protection System

All other product and corporate names used in this document may be trademarks or registered trademarks of other companies, and are used only for explanation and to the owners' benefit, without intent to infringe.

## GLOSSARY OF TERMS

The following definitions are provided for the special terms used in this document.

Term	Definitions
None.	

## REFERENCES

Following is a list of references used throughout this document.

1. WNA-LI-00038-FPL-P, Revision 1, "Licensing Input for Deletion of Steam / Feedwater Flow Mismatch Reactor Trip", February 2005

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**SECTION 1**  
**PURPOSE AND SCOPE OF DOCUMENT**

The purpose of this document is to provide review and concurrence of the FPL response to an NRC request for supplementary information relative to their review of Reference 1, and to determine the appropriate proprietary designation for the response.

The scope is limited specifically to Request 2 and the corresponding response as shown in Appendix A.

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**SECTION 2**  
**SUMMARY OF REVIEW AND CONCLUSION**

Request 2 as shown in Appendix A requests a description of the existing feedwater instrumentation from a reactor protection and control point of view relative to control and protection system interaction, and the role of the Median Signal Selector (MSS).

Westinghouse concurs with the response shown in Appendix A and has no additional comments.

Relative to proprietary designation, it is understood that the response in Appendix A has been developed based upon section 5.4.2.7 of the FPL Reactor Protection System Design Basis Document, which was originally issued as a Westinghouse Class 2 document. The material also corresponds to the type of information which had been provided previously in submittals for other plants, and which had been considered as Westinghouse Proprietary Class 2 in such submittals. As a result, Westinghouse requires that the attached response be bracketed as shown and considered proprietary for submittal to the NRC.

(Last Page of Section 2)

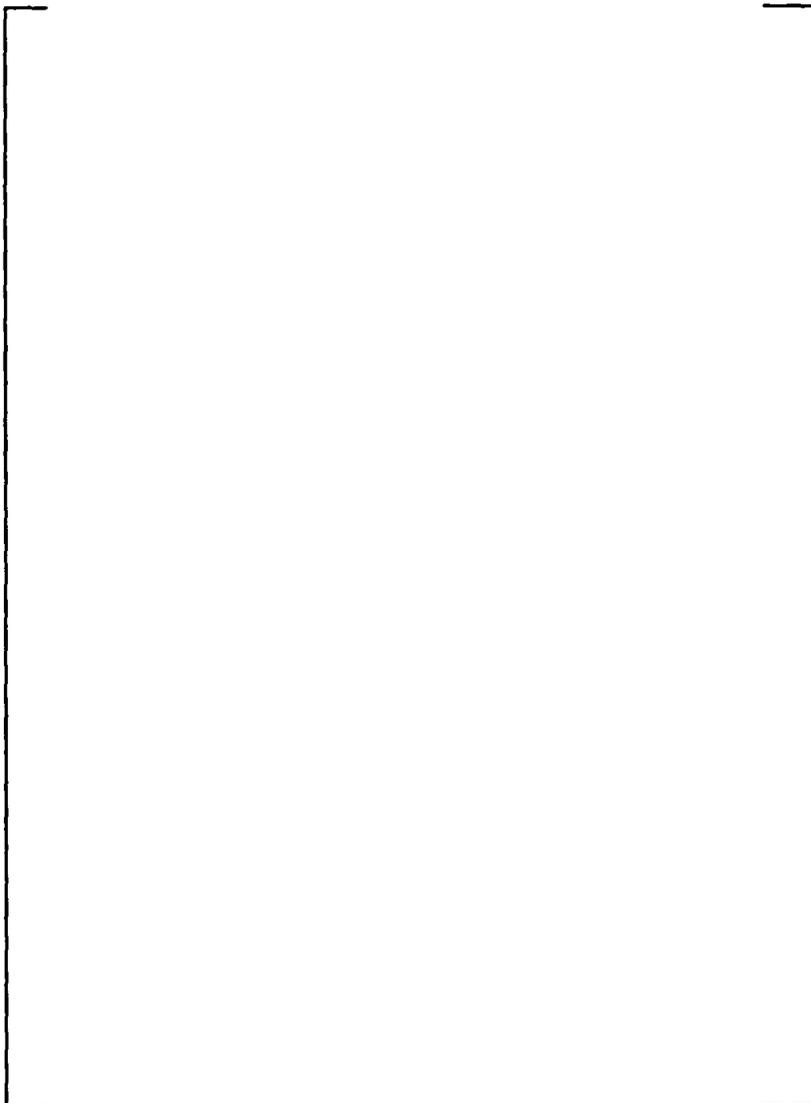
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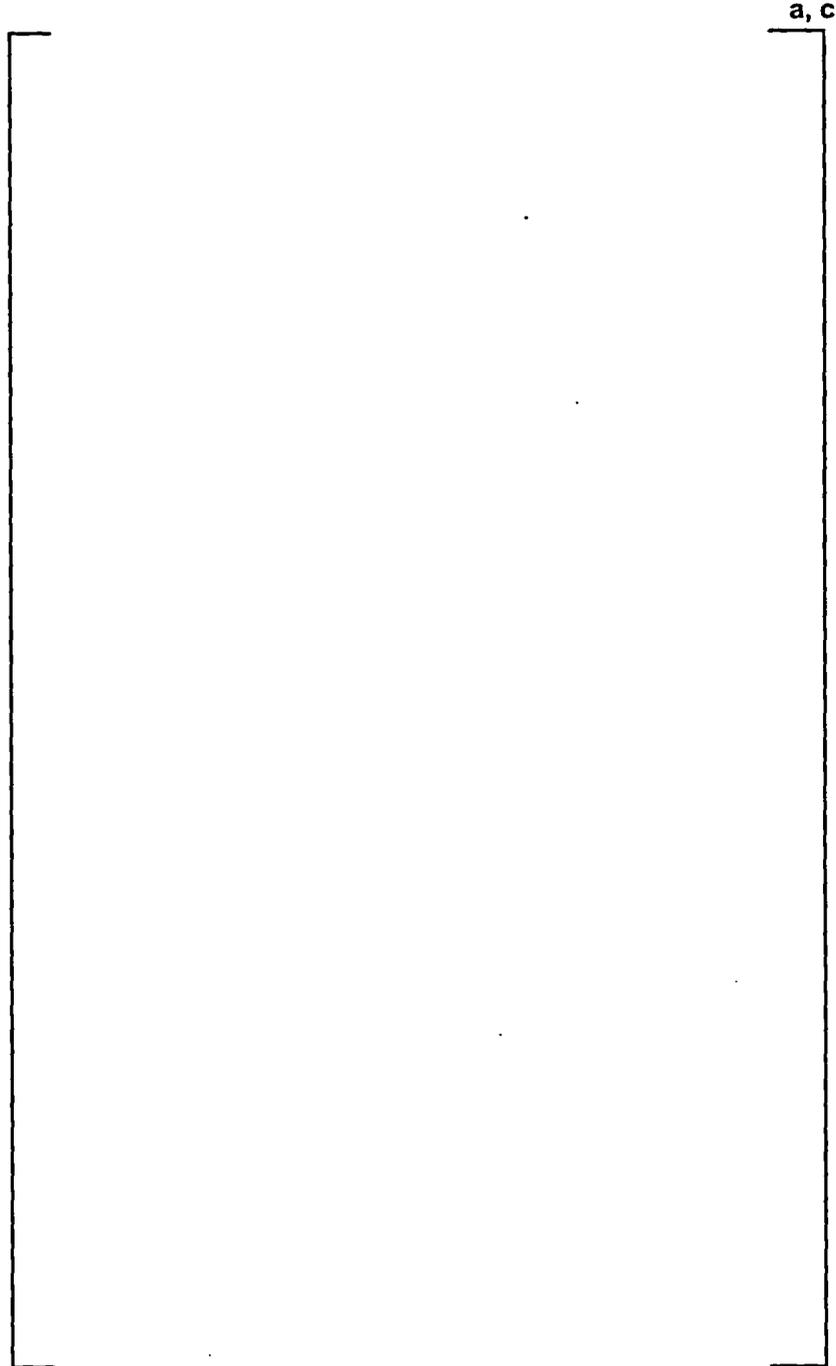
APPENDIX A RESPONSE (REQUEST 2)

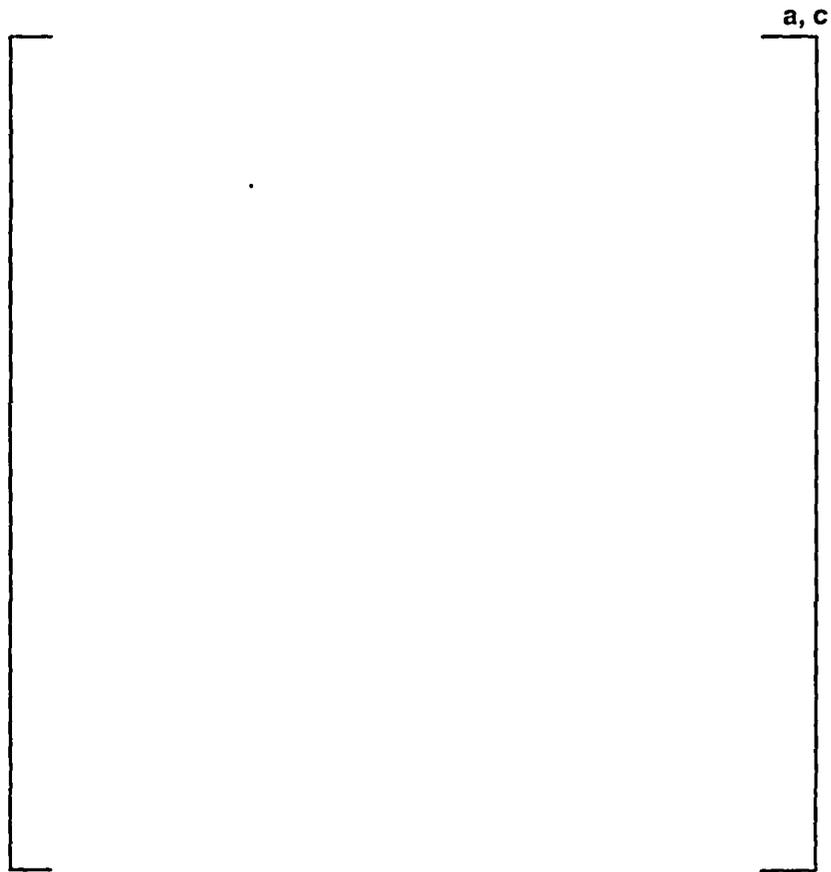
Request 2. Provide an explanation of the existing feedwater instrumentation system, from the reactor protection and control point of view, including the limitations of the existing system for which the proposed TS change has been requested, specifically addressing adverse effect of the existing control and protection system interaction and how it will be eliminated by the new Median Signal Selector (MSS).

Response:

a, c







(Last Page of Document)

**Enclosure 2**

**Westinghouse Nuclear Safety Advisory Letter**  
**NSAL-96-004**  
**Control and Protection Interaction August 14, 1996**



Westinghouse  
Energy  
Systems  
Business  
Unit

NUCLEAR SAFETY ADVISORY LETTER



THIS IS A NOTIFICATION OF A RECENTLY IDENTIFIED POTENTIAL SAFETY ISSUE PERTAINING TO BASIC COMPONENTS SUPPLIED BY WESTINGHOUSE. THIS INFORMATION IS BEING PROVIDED TO YOU SO THAT A REVIEW OF THIS ISSUE CAN BE CONDUCTED BY YOU TO DETERMINE IF ANY ACTION IS REQUIRED.

P.O. Box 355, Pittsburgh, PA 15230-0355

<b>Subject:</b> Control and Protection Interaction	<b>Number:</b> NSAL-96-004
<b>Basic Component:</b> Instrumentation Tap/Impulse Line	<b>Date:</b> 8/14/96
<b>Plants:</b> Westinghouse NSSS Plants per "Summary" Below	
Substantial Safety Hazard or Failure to Comply Pursuant to 10 CFR 21.21(a)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Transfer of Information Pursuant to 10 CFR 21.21(b)	Yes <input type="checkbox"/>
Advisory Information Pursuant to 10 CFR 21.21(c)(2)	Yes <input type="checkbox"/>

**Reference:**

**SUMMARY:**

This NSAL is only applicable to those plants with three narrow range steam generator water level channels that have removed the low feedwater flow trip function on the basis that a median signal selector (MSS) on the level control signal input precluded the need for this back-up protection for a control/ protection interaction scenario. This design did not address the failure of a common tap for steam flow and narrow range steam generator level for which the low feedwater flow also provided back-up protection to satisfy IEEE-279 requirements.

Westinghouse has determined that this issue is not reportable pursuant to 10 CFR Part 21. Recommended actions are provided for plants using either an analog MSS or the Advanced Digital Feedwater Control System.

Additional information, if required, may be obtained from the originator. Telephone 412-374-5036.

**Originator(s):** R. B. Miller  
Regulatory & Licensing Initiatives

J. S. Galembush, Acting Manager  
Regulatory & Licensing Initiatives

## TECHNICAL DESCRIPTION

### ISSUE DESCRIPTION

Some plants with three narrow range steam generator level channels have installed a median signal selector (MSS) on the control side and deleted the low feedwater flow trip function. This trip function was necessary to provide a back-up to prevent a control and protection interaction scenario involving level channel failures. The MSS precluded an inadvertent control action from a postulated level channel failure and, therefore, it was determined that the back-up trap was not required. This design did not address a failure of the common tap for a steam flow channel and a narrow range steam generator level channel for which the low feedwater flow trip was also a backup. If this tap or impulse line were to sever, a low steam flow signal would begin to close the feedwater control valve and the level channel would fall high. The level control demand signal would not have a significant impact on the rapid transient and there is a high probability that a low-low steam generator level trip would be required. IEEE-279 Section 4.7.3 states that a second random failure be considered in this situation. Since only three level channels are provided, the second postulated failure of a level channel would not satisfy the trip logic. Plants with four level channels (using separate taps) providing the low-low steam generator level trip are not impacted by the scenario.

### TECHNICAL EVALUATION

Westinghouse provided guidance in the early 1970s on the installation of impulse lines for the steam flow and steam generator level channels via I&C Standards. Later plants utilize Level Systems Installation Schematics. The common tap connection is shown on these drawings. Two steam flow channels are provided for each loop, only one of which shares a tap connection with a narrow range steam generator level channel in a three level channel system.

The original design that eliminated the low feedwater flow trip could be accomplished with either an analog or digital MSS. The digital MSS is part of the Advanced Digital Feedwater Control System, which also provides either a MSS or an Arbitrator for the steam flow inputs. Although the same certification was not performed on the Arbitrator function as was done for the MSS for the steam generator level signal, redundant signal validation on steam flow provides confidence that the failure of a steam flow channel will not perturb the control system. Plants with an analog MSS on the level channels also have a selector switch for the steam flow control signal. Selecting the steam flow transmitter that is not connected to steam generator narrow range level will also preclude the problem.

### ASSESSMENT OF SAFETY SIGNIFICANCE

To determine the significance of this issue, a search of INPO records was performed and no instances of tap or impulse line severance had been reported. The probability of a tap/impulse line failure coupled with another level channel of the same redundant set falling high is extremely low. Therefore, this issue is not considered to be a substantial safety hazard and will not be reported pursuant to 10 CFR Part 21. However, as stated in 10 CFR 50.55a(h), the design must meet IEEE-279 and certain actions are required to comply with the control/protection interaction section of that standard.

## **RECOMMENDED ACTIONS**

These actions apply only to plants with a three channel low-low steam generator water level trip function that have incorporated a MSS for the control signal from these level channels and removed the low feedwater flow trip function.

The plants with an analog MSS, must either, 1) remove the steam flow control signal selector switch and connect directly to the steam flow transmitter that does not share a tap, or 2) include a statement in the Technical Specification Bases section for the Steam Generator Water Level Low-Low function to the effect that: "The steam flow selector switch must normally select the steam flow transmitter that does not share a tap connection with a narrow range steam generator water level transmitter."

For plants with the Advanced Digital Feedwater Control Systems, Westinghouse will supplement the original licensing documentation to include the MSS/Arbitrator for the steam flow signals. There is no plant action required except a review of this documentation against their licensing bases for removal of the low feedwater flow protection function.

**Enclosure 3B**

**FPL Letter ENG-LCM-04-256**  
**PTN 3 Engineering Evaluation**  
**PTN-ENG-SEIJ-04-073 for Section 4.2**  
**Platform Considerations**  
**For**  
**Westinghouse Licensing Report WNA-LI-00026-FPL**  
**Regarding Steam/Feedwater Flow Mismatch**  
**Reactor Trip December 17, 2004**



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Enclosure 3B  
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700 Universe Boulevard  
Juno Beach, FL 33408

ENG-LCM-04-256  
December 17, 2004

Mr. P.J. McDonough  
Customer Projects Manager  
Westinghouse Electric Company  
Nuclear Services  
P.O. Box 355  
Pittsburgh, Pennsylvania 15230-0355  
USA

**Subject: PTN 3 Engineering Evaluation PTN-ENG-SEIJ-04-073 for Section 4.2  
Platform Considerations for Westinghouse Licensing Report WNA-LI-  
00026-FPL Regarding Steam /Feedwater Flow Mismatch Reactor Trip.**

Dear Mr. McDonough:

Attached are subject Engineering Evaluation and Platform Considerations for incorporation into Revision B of the subject document identified by Westinghouse as Dated November, 2004.

If you have any questions regarding this matter please feel free to contact Warren Busch at 561-691-2963, or Samuel C. Moore at 561-691-2652.

Sincerely,

A handwritten signature in black ink, appearing to read 'Dan Tomaszewski', with a stylized flourish at the end.

Dan Tomaszewski  
LCM Project Manager

cc: Warren Busch  
Steve Hetrick  
Samuel Moore  
Gary Wood  
Ralph Cholewinski  
Paul Collette, Westinghouse w/ attach