

November 6, 1996

MEMORANDUM TO: David B. Matthews, Chief  
Generic Issues and Environmental  
Projects Branch  
Division of Reactor Program Management  
Office of Nuclear Reactor Regulation

FROM: Egan Y. Wang, Reactor System Engineer Original Signed By:  
Generic Issues and Environmental  
Projects Branch  
Division of Reactor Program Management  
Office of Nuclear Reactor Regulation

SUBJECT: MEETING SUMMARY OF OCTOBER 29, 1996, WESTINGHOUSE AND NRC  
REGARDING RETRAN AND VIPRE COMPUTER CODES

On October 29, 1996, representatives of Westinghouse met with representatives of the Nuclear Regulatory Commission (NRC). The purpose of this meeting was to discuss Licensing issues with regard to Westinghouse's RETRAN and VIPRE computers codes. Westinghouse representatives discussed current status on both RETRAN and VIPRE computer codes. Westinghouse representatives mentioned that several utilities are currently using these computer codes. Westinghouse representatives stated that the methodologies used in these codes have been reviewed and approved by the NRC for referencing in light water reactor licensing applications. Westinghouse representatives indicated Westinghouse is applying RETRAN and VIPRE for Chapter 15 non-LOCA safety analysis, based on NRC-approved codes and methodology.

Westinghouse is currently performing work to demonstrate five criteria:

- Eligibility - NRC approved codes and methods
- Application procedures - in-house design procedures in compliance with NRC-approved applications
- Personnel training and qualification - training program for user qualification
- Comparison calculations - comparisons with benchmark data from other NRC approved codes and/or tests
- Quality assurance (QA) and change control - QA program meets 10 CFR 50 Appendix B requirements.

Once the above five criteria are met, Westinghouse will notify NRC of compliance to the five criteria. Majority of the discussion involved of proprietary information. Attachment 1 provides a list of meeting attendees. Attachment 2 is the non-proprietary material presented by Westinghouse representatives.

Attachments: As stated  
cc w/att: see next page  
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OFC	PGE*	PM:PGE*	SC:PGE*	SC:PGE*	C:PGE*
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UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

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DISTRIBUTION: Mtg. Summary of October 29 Meeting with Westinghouse  
Dated November 6, 1996

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R. Cooper, RI

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W. Alexion, RIII

J. Dyer, RIV

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Mr. Sumit Ray  
Westinghouse Electric Corporation  
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NRC/WESTINGHOUSE MEETING  
LIST OF ATTENDEES  
Oct 29, 1996

NAME

ORGANIZATION

Ivey, Janelle	Westinghouse
Weiss, Eric	NRC
Orr, Frank	NRC
Lo, Sui-Sang	Union Electric Company
Serita, Brewer	NRC
Sung, Yixing	Westinghouse
Boyer, Roger	HL&P
Sechrist, Jim	Westinghouse
Ray, Sumit	Westinghouse
Wang, Egan	NRC

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## Westinghouse's RETRAN/VIPRE Licensing Introduction

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**Purpose of Meeting:** To present Westinghouse's (W) proposed licensing process for adopting the RETRAN and VIPRE computer codes and obtaining NRC concurrence

**Meeting Agenda:**

<u>Topic</u>	<u>Presenter</u>	<u>Time (Min.)</u>
Introduction	Sumit Ray (W)	10
Utility Application	Roger Boyer (HL&P)	5
VIPRE-01 Application	Yixing Sung (W)	45
RETRAN-02 Application	Jim Sechrist (W)	45
Overview of <u>W</u> Proposed Licensing Process	Sumit Ray (W)	10
Discussion	All	30

# **Westinghouse's RETRAN/VIPRE Licensing**

## **Overview of Westinghouse Proposed Licensing Process**

**Presented by**

**Sumit Ray  
Westinghouse Electric Corporation**

**October 29, 1996**



## **Westinghouse's RETRAN/VIPRE Licensing RETRAN & VIPRE Codes**

- o RETRAN-02 Code - A system T/H transient code developed for Electric Power Research Institute (EPRI)**
- o VIPRE-01 Code - A subchannel T/H code developed for EPRI**
- o Both codes have been reviewed and approved by the NRC for referencing in LWR licensing applications**
- o Many SER's have been issued to utilities on RETRAN/VIPRE applications for a wide variety of W plants.**
  - Commonwealth Edison (Byron & Braidwood)**
  - TU Electric (Comanche Peak)**
  - Duke Power (McGuire & Catawba)**
  - Northern States Power (Prairie Island)**
  - Virginia Power (North Anna & Surry)**
  - WCNOG (Wolf Creek)**
- o W's methodologies have previously been approved with use of RETRAN/VIPRE codes**
  - Revised Thermal Design Procedure (RTDP)**
  - WRB-1 & WRB-2 DNB correlations**



## **Westinghouse's RETRAN/VIPRE Licensing Westinghouse's Applications**

- o W is applying RETRAN & VIPRE for FSAR Chapter 15 non-LOCA safety analysis, based on
  - NRC-approved computer codes
  - NRC-approved analysis methodology**
- o W's extensive benchmark calculations confirm RETRAN & VIPRE can be equivalent to current design codes
  - LOFTRAN (system transient code)
  - THINC (subchannel code)**
- o There is no issue on RETRAN & VIPRE applications with current NRC-approved safety analysis methodology**
- o W's RETRAN/VIPRE applications will leverage and build upon existing expertise in the industry**
- o Scheduled domestic applications
  - South Texas SG replacement (licensing submittal in 1998)
  - Callaway Cycle 10 reload design in 1998**

## **Westinghouse's RETRAN/VIPRE Licensing Proposed Licensing Approach**

- o Use a simplified licensing approach proposed in W's letter to the NRC (NTD-NRC-95-4419)**
- o Demonstrate compliance to five criteria and notify the NRC:**
  - 1. Eligibility - NRC-approved codes and methods**
  - 2. Application Procedures - In-house design procedures in compliance with NRC-approved applications**
  - 3. Personnel Training & Qualification - Training program for user qualification**
  - 4. Comparison Calculations - comparisons with benchmark data from other NRC-approved codes and/or tests**
  - 5. QA and Change Control - QA program meets 10CFR50 Appendix B requirements**
- o Simplified licensing approach is mutually beneficial**
  - No compromise to safety standards**
  - Maintain high quality of engineering**
  - Streamline licensing process**

## **Westinghouse's RETRAN/VIPRE Licensing Proposed Licensing Approach**

- o W's RETRAN & VIPRE applications are in full compliance with the five licensing criteria**
  - 1. RETRAN, VIPRE and W's safety analysis methodology have been approved by the NRC**
  - 2 Codes will be used in accordance with W's design procedures for non-LOCA safety analyses**
  - 3. A large staff of qualified and experienced engineers and training programs updated for new users**
  - 4. RETRAN & VIPRE are compared with W's design codes and/or test data. Comparison results are explained and documented as part of QA records**
  - 5. Software Control under Westinghouse Quality Management System (Rev.1) approved by the NRC**
- o QMS (Rev.1) commitments are applicable to RETRAN & VIPRE**
  - Error reporting (already inspected by the NRC)**
  - Software design control (already inspected by the NRC)**
  - Document control (already inspected by the NRC)**

## **Westinghouse's RETRAN/VIPRE Licensing Proposed Licensing Approach**

- o    W's records contain**
  - Detailed RETRAN & VIPRE qualification results**
  - Demonstration of full compliance to the five criteria**
  
- o    NRC will be notified on compliance to the five criteria**
  - NRC audit if necessary**
  - Response to any NRC questions**
  
- o    Summary of code qualification results will be provided**
  
- o    A closure letter is requested from the NRC approving W's  
RETRAN & VIPRE applications with existing safety  
analysis methodology**

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## Westinghouse's RETRAN/VIPRE Licensing Overview Summary

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- o Westinghouse's RETRAN/VIPRE applications are based on NRC-approved codes and safety analysis methodology
- o The simplified licensing approach (5 criteria) is applicable
- o W will demonstrate compliance to licensing acceptance criteria
- o W will provide code qualification summary
- o W maintains detailed results on record for any necessary NRC's audit
- o W will notify the NRC on licensing compliance
- o A closure letter is requested from the NRC