

NOV 7 1989

MEMORANDUM FOR: Jerry N. Wilson, Section Leader, Advanced Reactors and Standardization Section, Division of Regulatory Applications, Office of Nuclear Regulatory Research

FROM: Peter M. Williams, Advanced Reactors and Standardization Section, Division of Regulatory Applications, Office of Nuclear Regulatory Research

SUBJECT: MEETING ON UTILIZATION OF DATA FROM THE DECOMMISSIONING OF FORT ST. VRAIN TO SUPPORT THE REVIEW OF THE MHTGR

Summary

A joint NRR/RES meeting with the Department of Energy (DOE) and Public Service Company of Colorado (PSC) was held on October 26, 1989, to discuss the utilization of data from Fort St. Vrain to support the review of the MHTGR. A list of attendees is given in Enclosure 1. The staff and DOE realize the potential benefit that data from Ft. St. Vrain can have to both NRC and DOE and; therefore, consider it worthwhile to exchange ideas regarding what can be learned prior to and during the decommissioning of the plant. Accordingly, this meeting was to exchange ideas and learn the status of DOE's plans to obtain data.

Because of equipment concerns, decommissioning costs, and concerns of data quality, DOE does not plan to pursue the use of Fort St. Vrain (FSV) to obtain data on reactor physics, fluid flow, heat transfer, and depressurization phenomena prior to its decommissioning. Rather, DOE will concentrate on the examination of components, structures, fuel, and materials during and after decommissioning. Items of potential interest were identified by PSC in Enclosure 2.

Fort St. Vrain is now permanently shutdown and expects to begin unloading fuel on November 27, 1989. A preliminary DOE-PSC technology transfer contract is in effect and a draft transfer technology plan was completed in September 1989, with the final resolution of the technology transfer scope and the implementation of technology transfer to be developed in the future.

DISCUSSION

Mr. Larry Brey of PSC presented the status of the DOE/PSC HTGR technology transfer program for Fort St. Vrain. A summary of this program is given in Enclosure 2 where the historical, current, and future activities are identified. Items being considered for both the pre-decommissioning and decommissioning phases are listed. A final determination of the transfer scope has not yet been made nor has a decision to "safe store" the reactor vessel or to proceed immediately with dismantlement. This is partly an economic decision

8911130364 891107
PDR ADOCK 05000267
P PNU

DF05
/1

and will affect the scope of the technology transfer program. DOE is doing a cost effectiveness study. The DOE NPR-MHTGR program may contribute to cost of the technology transfer program.

The NRC staff expressed its views regarding information useful to the staff to support its review of the MHTGR which possibly could be obtained during the decommissioning phase. This included examination of the steam generator (adhesion of particulates and inspection of bimetallic welds), structural performance of the graphite core supports, vibration effects on metals, and fuel performance by means of established post irradiation examination techniques including examinations for fuel coating microporosity. Evaluation of operational history is also considered important and includes analysis of information from the Data Acquisition System (DAS), inservice inspections, and operator responses to abnormal events.

DOE plans to remove the plateout probe in the primary system as its first action under the preliminary technology transfer agreement. This will exercise the preliminary plan and lead to a final agreement.

S.J. Ball (ORNL) outlined tests and experiments that DOE might consider in Fort St. Vrain before decommissioning. The tests were not discussed in detail because of DOE's decision that such activities would not be cost effective in terms of decommissioning costs and concerns of data quality. The discussions on FSV utilization with DOE are expected to continue in forthcoming separate meetings, after DOE plans are more firm.

Peter M. Williams
Advanced Reactors & Standardization
Section
Division of Regulatory Applications
Office of Nuclear Regulatory Research

Distribution: [FT. ST. VRAIN]
subj-circ-chron
Reading Files
ESBeckjord SHWeiss, NR
TPSpeis TKing
BMorris PWilliams
ZRosztoczy PDR

John Fore
Offc: ARC1B:DRA:
Name: PWilliams:rg
Date: 11/7/89

OFFICIAL RECORD COPY

ATTENDEES AT MEETING ON FSV UTILIZATION

OCTOBER 26, 1989

<u>Name</u>	<u>Organization</u>
Ken Heitner	NRC/NRR
Syd Ball	ORNL
Pete Williams	NRC/RES
Charles Daily	NRC/ACRS
Jerry Wilson	NRC/RES
Peter G. Kroeger	BNL
John Cleveland	ORNL
Thomas King	NRC/RES
Robert P. Wichner	ORNL
Ray Mills	MHTGR/PDCO
A. C. Millunzi	DOE
L. Brey	PSC
Peter B. Erickson	NRC/NRR
S. H. Weiss	NRC/NRR
Danalle Weaver	Energy Daily
Med EL-Zeftawy	ACRS

PSC Handout
HTGR Technology
Transfer from FSV

° HISTORICAL

- ° PSC, EPRI and GCRA Discuss Research on FSV Reactor Materials for HTGR Development - May 1987
- ° Discussions Initiated on Technology Transfer Between PSC and DOE (Idaho & NE), EGG - September 1988
- ° DOE-Idaho and EGG Personnel Badged for Access to Fort St. Vrain
 - ° Witness Plant Operations
 - ° Interview Plant Personnel
 - ° Assess Plant Design
- ° DOE/PSC Technology Transfer Contact in Effect
 - ° DOE Determines Tasks of Interest
 - ° Agreement is Reached on Scope, Cost, and Schedule of Tasks
 - ° Work is Performed and PSC is Reimbursed for Efforts Expended
- ° Meetings Established to Develop Technology Transfer Plan
 - ° DOE/EGG (Idaho and PSC - May 22, 1989)
 - ° DOE (Idaho and NE), EGG, GCRA, EPRI, and PSC - June 8, 1989
 - ° EPRI Funds Development of Preliminary Technology Transfer Plan
 - ° Working Group Meeting - June 23, 1989
 - ° Review Draft of Technology Transfer Plan
 - ° DOE (Idaho and NE), EGG, GCRA, EPRI, and PSC - August 2, 1989
 - ° Reviewed and Established Priorities
- ° Preliminary Technology Transfer Plan Completed - September 1989
 - ° Identifies Technology Available from FSV
 - ° Identifies Needs for NPR and MHTGR Programs
 - ° Identifies Priorities, Risks, and Schedules for Each Task

Current

◦ PSC Announces Permanent FSV Shutdown - August 29, 1989

- Steam/Generator and Control Rod Drive Problems

◦ DOE/EGG (Idaho) and PSC Meeting - September 11, 1989

- Reviewed Steam/Generator and CRD Issues
- Discussed Technology Transfer Methodology
- Reviewed Items of Potential Interest (Pre-Decommissioning)
 - Plateout Probe
 - Control Rod Drive & Absorbers
 - Purification HTFA and LTFA
 - Detailed FSV Radiation Survey
 - Detailed Tritium Balance
 - Fuel Test Elements
 - H451 Graphite
 - Helium Circulator
- Agreed on Removal of Plateout Probe as Initial Project Utilizing DOE/PSC Contract
- Agreed on Formulation of Task Team as Formal Mechanism in Accomplishing Technology Transfer Objectives
- Reviewed Items of Potential Interest (Decommissioning Phase)
 - Steam Generators
 - Flow Control Valve
 - Core Support Post & Seat
 - Core Barrel Spring Posts
 - Class C Insulation
 - Tube Sheet
 - Reflector Blocks
 - Core Barrel Seals
 - Hot Gas Duct & Insulation
 - Helium Transfer & Recirc. Compressors
 - Plant, System & Component Operation and Maintenance History
 - Detailed Visual Inspection of Upper Plenum

◦ NRC, DOE, PSC Meeting on Technology Transfer - October 26, 1989

- Fuel Test Elements and Graphite Performance

° Future

- ° Implementation of Technology Transfer Task Team
- ° Final Resolution of Technology Transfer Scope
 - ° Incorporation of Scope into FSV Defueling & Decommissioning Schedule:
- ° FSV Schedule:
 - ° November 26 - End of 100-Day Cooldown
 - ° November 27 - Commence Defueling
 - ° August 1990 - Proposed Decommissioning Plan Submitted to NRC
 - ° December 1991-Defueling Complete
Begin Control Rod & Helium Circulator Removal
 - ° June 1992 - Component Removal Complete