UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-4005

July 15, 2004

R. T. Ridenoure
Vice President
Omaha Public Power District
Fort Calhoun Station FC-2-4 Adm.
P.O. Box 550
Fort Calhoun, NE 68023-0550

SUBJECT: SUMMARY OF CATEGORY 1 MEETING WITH FORT CALHOUN STATION

Dear Mr. Ridenoure:

This refers to the meeting conducted in the Region IV office on July 8, 2004. This meeting was held to discuss significant projects planned for the next two outages at the Fort Calhoun Station. Specifically, during the 2005 refueling outage, the Fort Calhoun Station will replace the main condenser and moisture separators and implement the first phase of modifications to install a rapid refueling package. During the 2006 outage, the Fort Calhoun Station will replace the reactor pressure vessel head, the pressurizer, and the two steam generators and will complete the installation of the rapid refueling package. In addition, the Omaha Public Power District is constructing an independent spent fuel storage installation at the Fort Calhoun Station and plans to load the first storage casks in the spring of 2006.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosures will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Should you have any questions concerning this matter, we will be pleased to discuss them with you.

Sincerely,

Kriss M. Kennedy, Chief
Project Branch C
Division of Reactor Projects

Enclosures:
1. Attendance List
2. Licensee Presentation

cc w/enclosures:
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DRP Director **(ATH)**
DRS Director **(DDC)**
Senior Resident Inspector **(JGK)**
Branch Chief, DRP/C **(KMK)**
Senior Project Engineer, DRP/C **(WCW)**
Staff Chief, DRP/TSS **(PHH)**
RITS Coordinator **(KEG)**
Dan Merzke, Pilot Plant Program **(DXM2)**
RidsNrrDipmLipb

ADAMS: ☒ Yes ☐ No Initials: KMK
☒ Publicly Available ☐ Non-Publicly Available ☐ Sensitive ☒ Non-Sensitive

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RIV:PE:DRP/C	C:DRP/C			
RVAzua;df	KMKennedy			
KMK for				
7/14/04	7/15/04			

OFFICIAL RECORD COPY T=Telephone E=E-mail F=Fax

ENCLOSURE 1

NRC PUBLIC MEETING ATTENDANCE	
LICENSEE/FACILITY	Omaha Public Power District Fort Calhoun Station
DATE/TIME	July 8, 2004; 12:00 Noon (CST)
LOCATION	Training Conference Room Region IV Office
NAME (PLEASE PRINT)	**ORGANIZATION**
Ron Bayer	OPPD
Ralph Phelps	OPPD
Sudesh Gambhir	OPPD
Ross Ridenoure	OPPD
GARY GATES	OPPD
Ron Short	OPPD
KEN ERSMAN	OPPD
TOM MATTHEWS	OPPD
STANLEY MACIE	STONE & WEBSTER
Jay Cate	OPPD
Osama Farradj	Transnuclear
Kriss Kennedy	NRC

NRC PUBLIC MEETING ATTENDANCE	
LICENSEE/FACILITY	Omaha Public Power District Fort Calhoun Station
DATE/TIME	July 8, 2004; 12:00 Noon (CST)
LOCATION	Training Conference Room Region IV Office
NAME (PLEASE PRINT)	**ORGANIZATION**
Bruce Mallet	NRC
Art Howell	NRC
Jeff Clark	NRC
Blair Spitzberg	NRC
Vince Everett	NRC
Ray Kellar	NRC

ENCLOSURE 2

Fort Calhoun Station
Major Projects

Omaha Public Power District
Presentation to the Nuclear Regulatory Commission, Region IV
July 8, 2004

Introduction

Ross Ridenoure
Vice President

Introduction

- OPPD participants
- Purpose of meeting
  - Introduce project management teams
  - Discuss the what, why, and when of upcoming major projects at Fort Calhoun Station
  - Provide milestone information for planning of NRC inspection resources
  - Discuss successful management of projects and plant operations

Meeting Agenda

- 12:00 to 1:50 (Major projects except ISFSI)
  - Safety & Engineering – Ralph Phelps
  - Projects Overview – Sudesh Gambhir
  - NSSS Component Replacement Overview – Ron Short
  - NSSS Component Design/Fabrication – Jay Cate
  - NSSS Installation – Ron Bayer
- 1:50 to 2:00: Break
- 2:00 to 3:00
  - ISFSI – Sudesh Gambhir & Ken Erdman
  - Closing remarks by OPPD and NRC

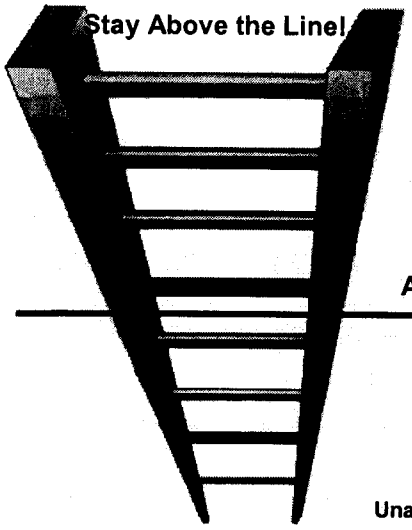
Main Thing

- All activities at FCS support the Main Thing: Safe, event-free, cost-competitive nuclear production of electricity for OPPD
- "Failure to prepare is preparing to fail."
  -John Wooden

Core Principles

- **C**ritical self-assessments are broad and lasting
- **H**uman Performance is exemplary
- **O**perations are event-free throughout the organization
- **I**nitiatives in high visibility areas have strong performance
- **C**ost-effective producer of electricity
- **E**xcellence in materiel condition

Ladder of Accountability



Stay Above the Line!

Make It Happen!

Find a Solution!

Own It!

Acknowledge Reality!

"Accountable Behaviors" Things Happen BECAUSE OF YOU

Wait and Hope

"I Can't"

Personal Excuses

Blame Others

Unaware and/or Unconscious

"Victim Behaviors" Things Happen TO YOU

Safety and Engineering

Ralph Phelps

Division Manager – Nuclear Engineering

Safety

- Nuclear Safety
  - Top priority
  - Managing current engineering issues
  - Required inspections of RV Head, Pressurizer, and Steam Generators
- Radiological Safety
  - Control of Restricted High Radiation Areas
  - ALARA dose for required inspections and repairs
  - Source term reduction

Safety

- Industrial Safety
  - "Safety 1 on 1" initiative
  - Improvement in Lost Time Accident record
- Project Safety
  - Major component replacements
  - Increased contractor population through 2006

My Safety Pledge

I **WILL** now take responsibility for my own safety.

I **WILL** never jeopardize my own life or the lives of my fellow employees.

I **GIVE** my fellow employees permission to give me positive input to improve my work habits and help me work safer.

I **WILL** use my personnel protective equipment and the tools necessary to PROTECT me from hazards.

I **WILL** stop the job instead of allowing it to progress using unsafe practices.

I **WILL** motivate myself to increase my development of a positive safe workplace.

I **WILL** leave behind all those things that may hinder my safety awareness.

When I have a positive idea to increase safety I **WILL** pass it on.

I **AM** making a new and fresh commitment to safety, my safety attitude, safety awareness at home and work.

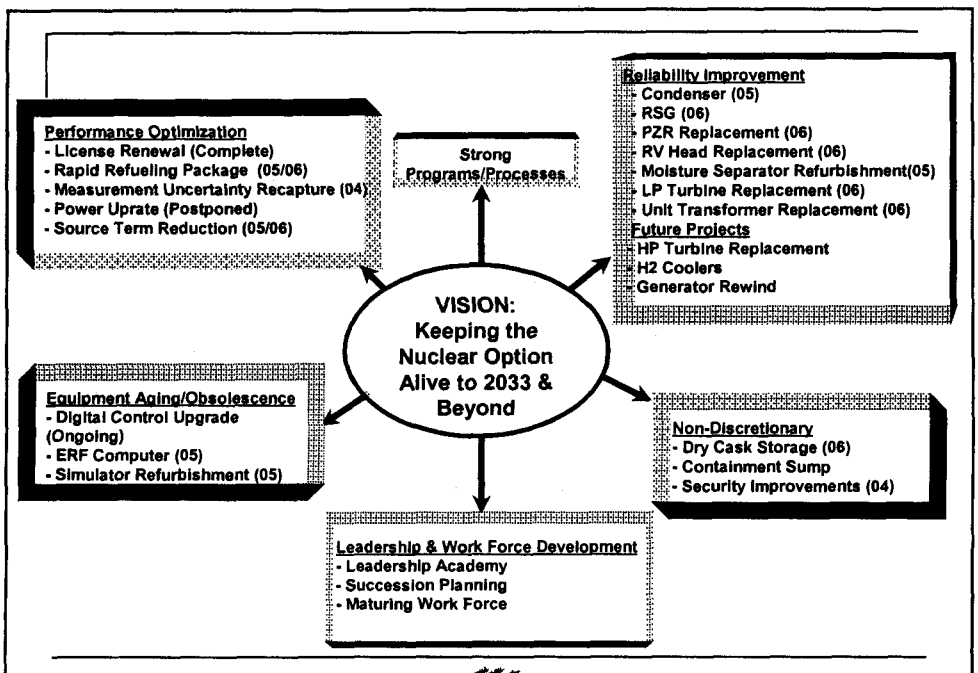
Engineering

- Engineering support of Project Teams
  - NED Strategic Plan
  - Matrixed personnel
  - Subject Matter Experts
  - Station Modification Acceptance & Review Team
- Engineering training/qualification of contractors

Overview

Sudesh Gambhir

Division Manager – Nuclear Projects



Project Goals

- Nuclear safety/quality
  - First time quality in everything we do
- Industrial safety
  - No one injured
- Excellent communications
- Improved plant performance
  - Reliability

Challenges

- Maintain Operational Focus
  - Keep the "Main Thing" the Main Thing
  - Be Responsive to Operations & Maintenance needs
  - Maintain NRC Confidence
  - Design Review for Major Projects
- Successfully Execute the Projects
  - First time quality
  - On Budget – On Schedule
  - Use of Plant Operating Experience & Tribal Knowledge
  - Ownership

Key Success Factors for Achieving Second Unit Performance the First Time

- Site Engagement (Ownership)
- Staffing for Success
- Integrated Planning
- Communications
- Trust and Mutual Respect
- Teamwork and Accountability

Vendor Performance
(Staffing for Success)

- Vendor Selection (best athlete approach)
- Team/Relationship Building
- Clear Expectations/Training/Pre-job Briefings
- Oversight and Monitoring
  - 2 resident representatives at manufacturer
  - Executive oversight meetings
- Accountability
- Integration with plant staff

Risk Management & Mitigation
(What can go wrong & What are the consequences)

- Risk = Probability x Consequences
- Risks and mitigation strategies
  - Vendor Performance → Use operating experience
  - Installation → Identify first of a kind evolutions
  - Nuclear → Maintenance Rule/use of PRA
  - Outage → Use Outage Risk Assessment Model
  - Budget → BWG Consulting assessment
  - Other (weather, transportation, etc.) → Included in Budget risks

Power Uprates

- Extended Power Uprate (EPU) project is indefinitely deferred
- Replacement components sized for up to 17% power uprate
- Appendix K 1.6% power uprate
  - CROSSFLOW problems being addressed
  - Submittal of revised amendment request could occur later this year

Balance of Plant Improvements

- Plant computer & simulator upgrades - 2005
- Condenser module replacement – 2005
- Moisture separator refurbishment – 2005
- Low pressure turbine replacement – 2006
- Unit transformer replacement – 2006

2005 "Big Outage" Preparation

- Site team fully integrated with no silos
- Roles and responsibilities crystal clear
- Relentless preparation & exhaustive reviews
- Detailed contingencies
- No missed milestones
- Contractor oversight plan
- Practice, practice, practice: On-line work behaviors the same as RFO work behaviors

NSSS Components Replacement Projects

Ron Short
Manager – NSSS Refurbishment Project

Scope

- Replace Steam Generators – 2006 RFO
- Replace Pressurizer – 2006 RFO
- Replace Reactor Vessel Head – 2006 RFO
- Install Rapid Refueling Package
  - New Missile and Neutron Shields in 2005 RFO (Phase 1)
  - Remainder in 2006 RFO (Phase 2)

Vendors Involved

- RSGs
  - Mitsubishi Heavy Industries (MHI): Design, Fabrication, and Delivery
  - Framatome ANP (Areva): Licensing/Safety Analysis
  - Bechtel: Installation
- RRVH
  - MHI: Design, Licensing, Fabrication, and Delivery (Westinghouse is Licensing subcontractor)
  - TBD: Installation

Vendors Involved

- RPZR
  - MHI: Design, Licensing, Fabrication, and Delivery (Westinghouse is Design and Licensing subcontractor)
  - Bechtel: Installation
- RRP
  - Westinghouse: Phase 1 Design, Fabrication, and Installation
  - TBD: Phase 2 Design, Licensing, Fabrication, and Installation

Schedule

- N-1 RFO: February 25 - April 21, 2005
- NSSS components delivery: May 15, 2006
  - Barge delivery preferred
  - Rail is alternate method
- SGRO: September 8 - December 7, 2006

NRC Inspection Procedures

- Steam Generator Replacement:
  - 50001 - Steam Generator Replacement Inspection
- Head Replacement:
  - 71007 - Reactor Vessel Head Replacement Inspection
- General
  - 57050 - NDE Visual Examination Procedure Review/Work Observation/Record Review
  - 57060 - NDE Liquid Penetrant Examination Procedure Review/Work Observation/Record Review
  - 57080 - NDE Ultrasonic Examination Procedure Review/Work Observation/Record Review

Licensing Actions

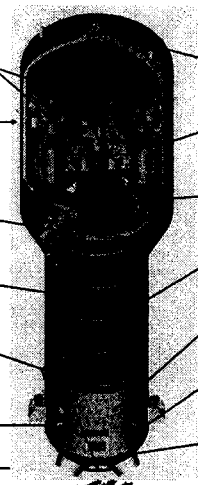
- Non-TS changes requiring NRC approval (per 50.59) have not been identified to date
- Minor Technical Specifications changes
- Relief Request: ASME Section XI leak rate testing for Containment following restoration of opening

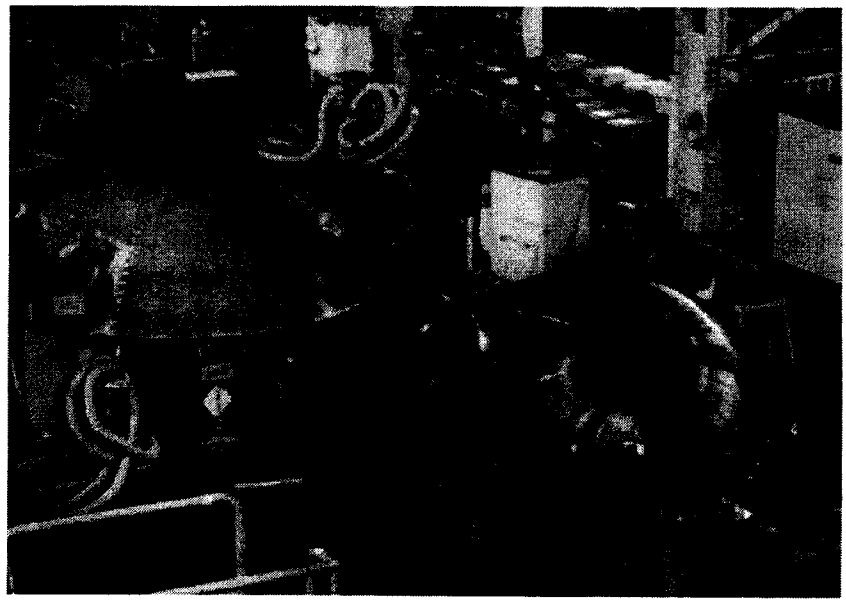
Component Design and Fabrication

Jay Cate

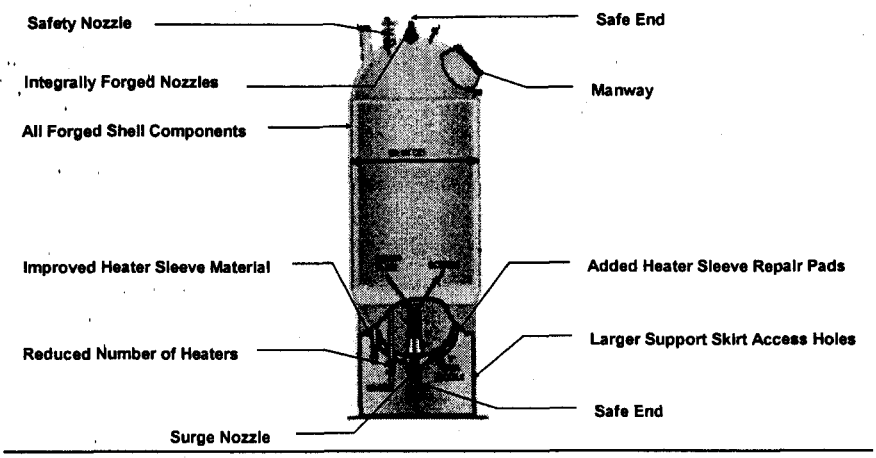
NSSS Component Lead

Replacement Steam Generators (RSG) Fabrication/Design Features

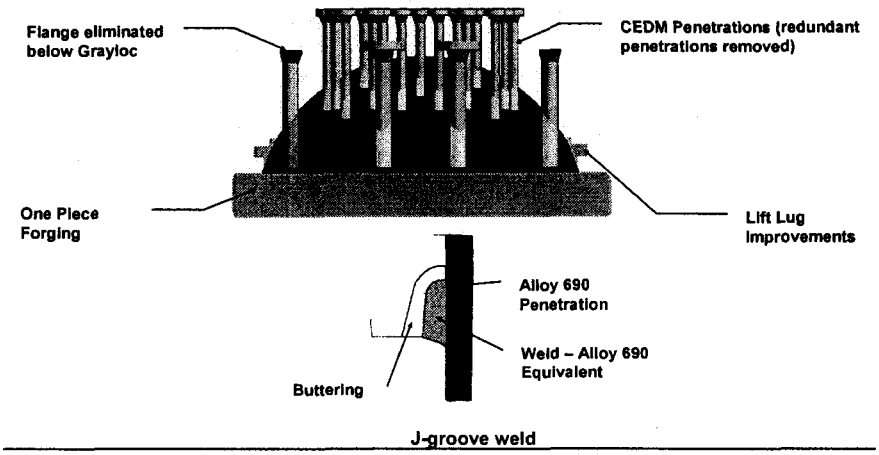


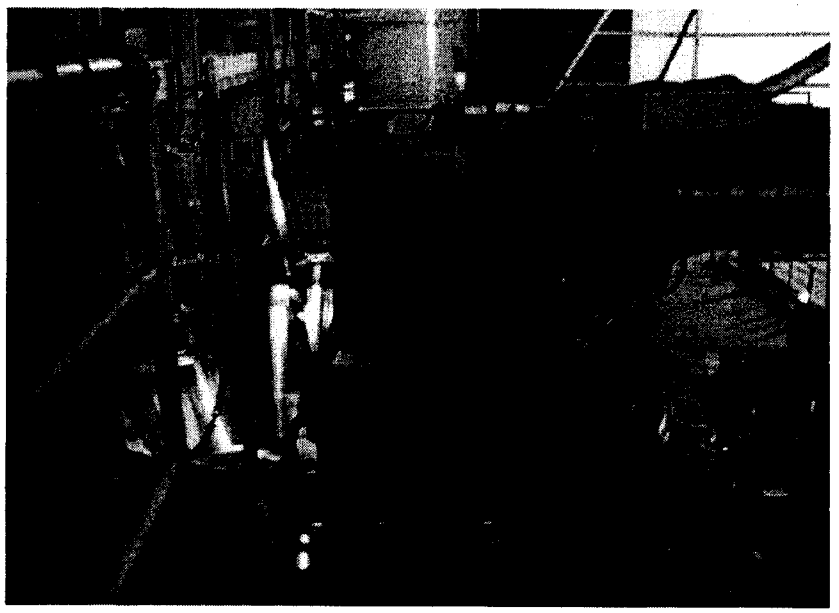


Replacement Pressurizer (RPZR) Fabrication/Design Features



Replacement RV Head (RRVH) Fabrication/Design Features





NSSS Component Supplier Responsibilities

- Mitsubishi Heavy Industries (MHI) contracted to supply RSGs, RPZR, RRVH
  - ♦ Design
  - ♦ Material procurement
  - ♦ Component fabrication
  - ♦ Delivery to Fort Calhoun

Major Sub-suppliers of MHI

- RPZR Design – Westinghouse
- Heavy Forgings – Japan Steel Works
- RSG Tubing – Sumitomo Metals Industries
- Various other forging/material/services sub-suppliers – all accepted under MHI Quality Assurance Program

Component Installation

Ron Bayer

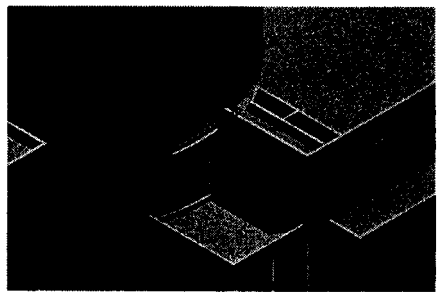
NSSS Installation Manager

Component Installation 2 Phase Approach

- Phase 1
  - Perform engineering studies to determine optimum installation method
  - Identify risks and propose mitigation
  - Identify "first of a kind" evolutions for further action
- Phase 2
  - Perform detailed installation engineering
  - Perform detailed planning

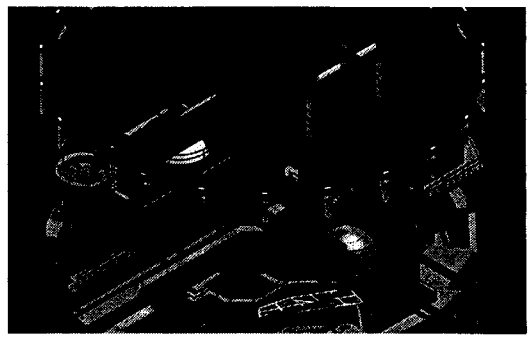
Component Installation

- Maintenance Rule evaluations as appropriate
- Containment Opening
  - Similar to other plants
  - Complex process due to the helical tendon design and number of tendons
  - Octagon opening allows removal of the fewest tendons



Component Installation

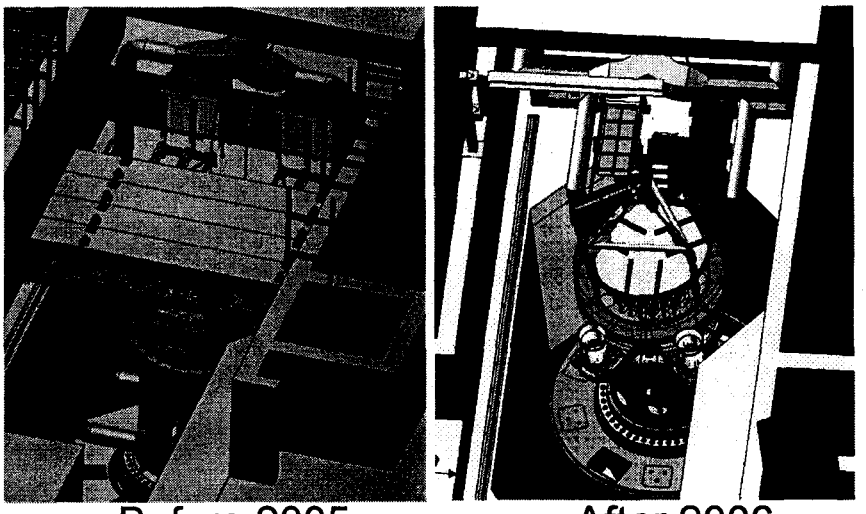
- Inside Lift System (ILS)
  - Used for SG movements
- Double Runway System
  - Outside rails supports ILS
  - Inside rails used to transport components out of and in to Containment



Closing Containment Opening

- Reinstall Containment Liner
- Reinstall Tendon Sheathing
- Reinstall Rebar
- Pour Concrete to Close Opening
- Re-tension Tendons
- Code pressure testing

RRP/RRVH Installation



Before 2005 After 2006

RRP/RRVH Installation

- RRVH installed with rapid refueling enhancements
  - Retractable utility bridges, integral fans
  - Missile & neutron shield installation 2005 RFO
  - Concept similar to Seabrook, Wolf Creek, others
- RRVH largely assembled prior to 2006 RFO
  - Limited laydown space in Containment
  - Difficult to reuse old components
  - Unique CEDM design (rack & pinion)
- OEM vendor (Westinghouse) as technical lead

End of First Presentation

- Questions/discussion
- Break

ISFSI

Independent Spent Fuel Storage Installation

Sudesh Gambhir

Nuclear Projects Division Manager

Ken Erdman

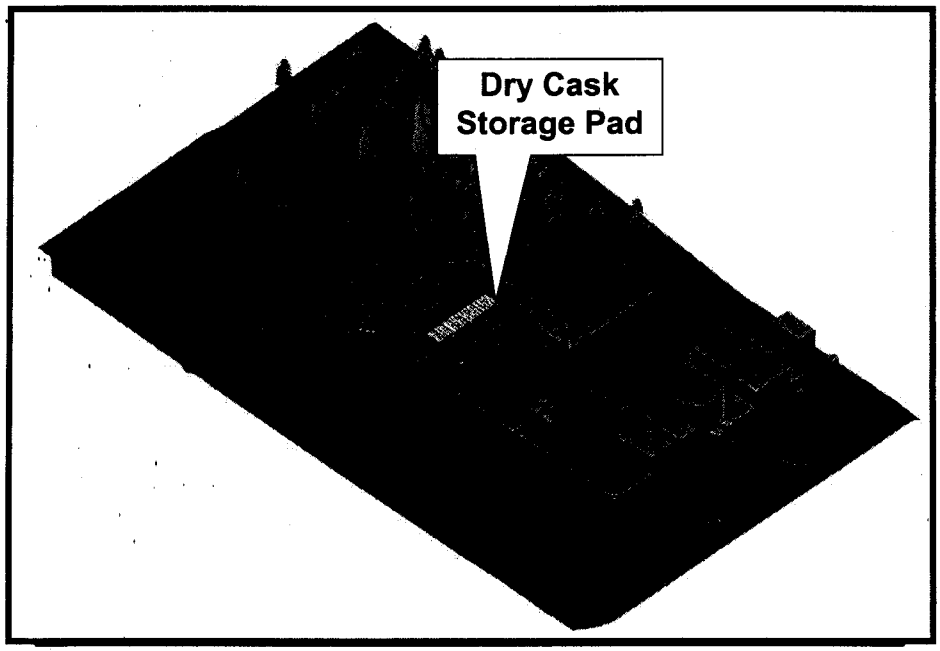
Project Manager

Site Interface

- Contractor controls
- Interface with other projects
- Operating Experience

Spent Fuel Storage

- FCS to lose full core off-load storage capability following the 2006 RFO
- Contract for fuel storage components and transfer services awarded to Transnuclear, Inc.
- Transnuclear to provide special equipment and experienced personnel for fuel transfer under OPPD management
- Work on Independent Spent Fuel Storage Installation (ISFSI) is underway
- Each of 10 storage modules to hold container with 32 fuel assemblies
- Initial load of storage casks scheduled for spring 2006



NRC Inspection Procedures

- 60851- Design Control Of ISFSI Components
- 60852 - ISFSI Component Fabrication by Outside Fabricators
- 60853 - Onsite Fabrication of Components and Construction of an ISFSI
- 60854 - Preoperational Testing of an ISFSI
- 60855 - Operation of an ISFSI
- 60856 - Review Of 10 CFR 72.212(b) Evaluations

ISFSI Project Phases

- ISFSI Construction
  - Civil Site Work
  - Protected Area Development
  - ISFSI/Plant Integration
- Dry Cask Storage System Fabrication
- Fuel Transfer

ISFSI Construction Schedule

Civil Site Work

- Site Excavation and Structural Fill:
  July 15 - September 1, 2004
- Concrete Pours and Final Grade Surfacing:
  September 1 - October 31, 2004
  (IP 60853)

ISFSI Construction Schedule

Protected Area Development

- Engineering & Facility Change:
  June 28 - December 14, 2004
- Security Equipment Procurement:
  December 15, 2004 to March 31, 2005
- Construction of Security Fence, Support Building, Light/Camera Towers, etc.:
  April 15 to October 1, 2005

ISFSI Construction Schedule

ISFSI/Plant Integration

- Installation/Assembly of HSM:
  July 1 - December 31, 2005
- Test of Cask Temperature Monitoring System:
  December 2005 - January 31, 2006
- Final Interface/Testing of ISFSI Security Systems:
  December 2005 - January 31, 2006

Dry Cask Storage System Fabrication

- Canister Fabrication Vendor Selection:
  July 1, 2004
- Dry Storage Canister Fabrication/Delivery:
  January - December, 2005
- Storage Module Fabrication/Delivery:
  March - December, 2005

Fuel Transfer Schedule

- Establish Load Campaign Responsibilities and Process Procedures:
  June 16, 2004 - January 31, 2005
- NRC Dry Run and Project Document Review:
  February 2006
- Initial 10 Canister Load Campaign:
  March - June 2006

Conclusion

- Questions
- Discussion
- Closing Remarks – W. Gary Gates