WESTINGHOUSE/ NRC MEETING

POWER PLANT UPRATING

July 26, 2001

*** Agenda ***

Power Upratings for
Westinghouse-CE Designed PWRs
July 26, 2001

Time	Subject	Presenter/ Discussion Leader
8:30 AM	Introductions/Overview	(W)
8:45	Summary of Uprating Process/Recently Approved Programs	(W)
9:30	Lessons Learned from 1.4% and 5% Uprate Submittals	(W/NRC)
10:00	Process and Approach for Licensing the Greater than 5% Uprates	(W/NRC)
10:30	Looking to the Extended (10 to 20%) Uprate Programs	(W/NRC)
11:15	Wrap-Up and Summary	(W/NRC)

Introductions/ Overview

Westinghouse Attendees

John Fasnacht	Mgr. Integrated Plant Engineering Services
Roy Kim	Supervisory Engineer, IPES
Mehran Golbabai	Power Uprate Program Mgr. for CE Designed Plants
Mike Gancarz	Product Mgr.-Operations Analysis Windsor Office
Charlie Brinkman	Director of Washington Operations
Hank Sepp	Mgr., Regulatory and Licensing Engineering

Introductions/ Overview

Goals/ Objectives For The Meeting

- Open dialogue regarding uprate analysis and licensing
- Obtain NRC feedback/ input on licensing approach and process
- Discuss NRC ongoing initiatives as they relate to Westinghouse uprate processes and methods
- Discuss ways to enhance and facilitate the overall uprating process
- Present overview of approach and plans for extended power uprates

Summary of Uprating Process/ Recently Approved Programs

Process Overview - Guiding Principles

- Generally follow the same process regardless of desired power level

- As uprated power level increases, depth of review generally increases

- Follow most recent licensing precedent
  - 5%+ Uprates - Farley and Byron/Braidwood, (W)
    - ANO, (CE)
  - 1% Uprates - Watts Bar, Salem, (W)
    - San Onofre, (CE)

Summary of Uprating Process/ Recently Approved Programs

- Maintain current licensing basis/ use approved methods and codes.

- WCAP-10263, "A Review Plan for Uprating the Licensed Power of a PWR Plant" - provides general guidance for Westinghouse designed plants.

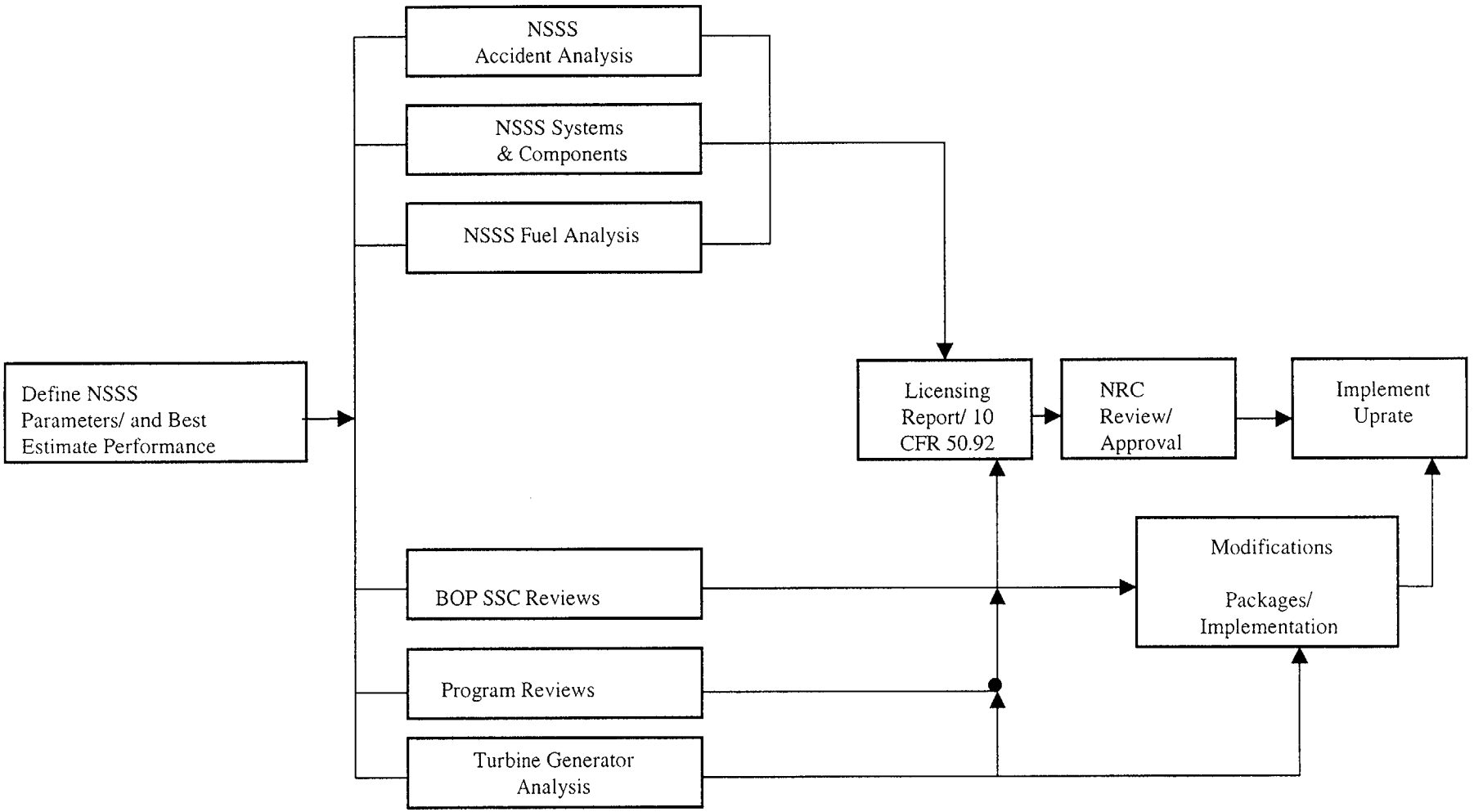
Summary of Uprating Process/ Recently Approved Programs

Upratings to Date

- 35 Westinghouse Designed Plants Uprated by total of 5,043 MWt or 1,670 Mwe - Equal to more than a 4-loop plant

- 10 Combustion Engineering Plants Uprated by total of 1,424 MWt or 475 MWe

General Overview of Uprating Process



Summary of Uprating Process/ Recently Approved Programs

NSSS Accidents/ Fuel

- Large and Small Break LOCA
- Non-LOCA/ Transient Analyses
- SGTR
- LOCA & SLB Mass and Energy
- Fuel Related Analyses
- Dose

Summary of Uprating Process/ Recently Approved Programs

NSSS Components

- Reactor Vessel
- Reactor Internals
- Pressurizer
- CRDM
- Loop Piping and Supports
- RCP
- Steam Generator
- Selected Auxiliary Equipment

Summary of Uprating Process/ Recently Approved Programs

NSSS Systems

- Control Systems and Condition I events
- RCS
- CVCS
- RHR
- SFPCS
- NSSS/ BOP Interface

Summary of Uprating Process/ Recently Approved Programs

Programs

- SBO
- MOV GL 89-10
- HELB
- EQ
- Grid Stability
- Human Factors

Summary of Uprating Process/ Recently Approved Programs

Key BOP SSCs

- MFW
- AFW
- MSS
- CCWS and SWS
- HVAC
- Electrical

Turbine-Generator

Lessons Learned from 1.4% and 5% Uprate Submittals

General Comments

- Selection of Design Parameters Important to Success of Uprating
- Accuracy of Analysis Inputs Is Important to Project Success
- Previous RAI Considerations Incorporated in Uprating Documentation
- Understanding of uprating impact on applicable analysis values, acceptance criteria and limits- critical to success
- Feasibility assessments to develop confidence that desired power level could be reasonably achieved

Lessons Learned from 1.4% and 5% Uprate Submittals

Appendix K Uprates (1.4% to date)

- Approach/ Process is mature
- Past and Current NRC review process/ timing
- Use of existing venturis for power uprate
- Going beyond 1.4% uprate
- Licensing precedent and model (evaluation vs. analytical)
    - components
    - systems
    - accidents
    - BOP

Lessons Learned from 1.4% and 5% Uprate Submittals

Up to 5% Uprates

- Farley and Byron/ Braidwood Submittals
- More emphasis on analyses vs. evaluation
- NRC review process/ time
- Margin generally exists. May need more advanced (approved) methods

Lessons Learned from 1.4% and 5% Uprate Submittals

RAI Topics for Discussion

- Stating Codes and Methods Used. Providing documentation of method approval
- Structural - providing stress intensity and fatigue usage for applicable locations
- Accident Analysis - defining acceptance criteria and quantifying results

Lessons Learned from 1.4% and 5% Uprate Submittals

RAI Topics for Discussion (continued)

- Defining the current licensing basis
- Non-safety aspects of BOP
- Other areas of concern

Process and Approach for Licensing the Greater than 5% Uprates

- Interface with Staff and ACRS
  - NRC Research Programs for Synergetic Effects
  - NRC Review of Site Calculations (e.g. Arnold)
  - NRC Position on Risk Informed Reviews
  - ACRS Review Process and Schedule
- Adjustments to Reviews or Inputs
- Schedule for Reviews

Process and Approach for Licensing the Greater than 5% Uprates

- Status of Uprate Standard Review Plan Goals
- Level of BOP Review-Level of Detail, Safety vs. Non-Safety Systems
- Formalized Process Standard Beyond Existing Precedent

Looking to the (10 - 20%) Uprate Programs

- Review of technical feasibility
- Review/ Implement the Process
- Licensing Approach
- Deployment Schedule
- NRC Feedback

Wrap-Up and Summary

- Continued Successful Track Record on Upratings
- Anticipate Technical Feasibility and Plant Modifications for Extended Power Uprates
- Continued Dialogue Proposed to Facilitate the Overall Process and Assure Continued Uprating Success for All Stakeholders