



Waterford 3 Extended Power Uprate

NRC/Entergy Meeting

October 16, 2002

Attachment 1

Agenda

- Introduction & Objectives
- Project Scope
- Project Schedule
- Plant Modifications
- Submittals
- Proposed Tech Spec Changes
- Specific Topic Discussion
- Open Discussion

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Introductions/Meeting Objectives

Introductions

Meeting Objectives

- Inform NRC staff of Entergy's proposed plan, schedule, and approach for implementing an extended power uprate
- Discuss submittal approach
- Gain NRC insights from previous uprates

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Project Scope

- 8% increase (from 3441 to 3716 MWt)
 - Maintain current T_{hot} temperature
- Westinghouse Electric tasked with NSSS engineering scope
- Enercon Services tasked with BOP engineering scope

Project Schedule

- Scoping Study completed November, 2001
- Submittal scheduled for September, 2003
- NRC approval requested by January, 2005
- Implementation during RF13, Spring 2005

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Plant Modifications

- Replace HP turbine
- Main Generator Rewind
- Replace generator output breakers
- Instrument setpoint changes
- Minor BOP changes as needed

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Submittals

- Submittal scheduled for September, 2003
- Use ANO submittal as starting template
 - consider RAls from other submittals
- Utilize guidance of review standard once issued
- Related Submittals

Proposed Tech Spec Changes

Parameter	Current Value	Proposed Value
Rated Thermal Power	3441	3716
Cold Leg Temperature	541<Tc<558 °F	536<Tc<547 °F
Pressurizer Pressure	2025<P<2275	2125<P<2275
Primary to Secondary Leakage	1 gpm / 720 gpd per SG	0.5 gpm / 360 gpd per SG
MFIV Closure Times	≤ 5.0 seconds	≤ 6.6 seconds
ADV	N/A	1000 psia

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Fuel & Core Design Impact

- Larger Batch Size
- Reduced F_r Power Peaking Factor
- Revised Physics Checklists
- Fuel Performance Confirmation
- Assessments of Fuel Rod Corrosion and Duty
- Consistent with Experience Base

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Transient Analysis Topics

Use of CENTS vs. CESEC:

- CENTS to replace CESEC for Ch.15 non-LOCA transient analyses (TS 6.9.1.11)
- CENTS generically approved for all CE plants
- Per GL 83-11 Supp.1, no W3 specific topical report required

Transient Analysis Topics

- Scoping studies: can support 115% of OLP
- Thermal margin events: COLSS & CPC will preserve margins with minimal setpoint changes
- RCS pressurization events:
LOCV with LOOP is limiting AOO:
< 2750 psia maintained

Main Steam Line Break

Post-trip Return-to-Power MSLB Analysis:

- Predicted fuel failure expected; more negative MTC a contributor
- Fuel failure previously predicted at other CE plants for RTP MSLB
- Will meet 10CFR100 limits

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CEA Ejection

CEA Ejection:

- Probable slight increase over current SAR
9.12% fuel failure
- Will meet 10CFR100 acceptance criteria
- Will demonstrate ≤ 280 cal/gm energy
deposition

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ECCS Performance Analysis

LBLOCA:

- can support beyond 109.5% of OLP
- 1999 EM: previously 1985 EM

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ECSS Performance Analysis

LOCA Long Term Cooling:

- Post-LOCA Boric Acid Precipitation analysis will assume mixing volume of core and part of outlet plenum (currently credit core and lower plenum)
- conservatisms in treatment of BAMT volume
- analysis remains consistent with CENPD-254 methodology

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ECSS Performance Analysis

SBLOCA:

- Credit automatic operation of ADV's for SBLOCA ECSS analysis
- ADV's Safety Related
- 1000 psia setpoint
- No credit for Charging Pumps, if possible.

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Containment Analysis Topics

- SAR 6.2 Containment Pressure-Temperature Analyses remain valid at 3716 MWt RTP
- Use of DDIFF code for subcompartment analysis
- Tributary line breaks selected for subcompartment analyses (credits leak before break, CEN-367)

Radiological Analyses

- Control room dose analyses:
 - non-LOCA events
 - increased in-leakage
- Alternative Source Term: separate submittal
- New X/Q's to be generated for offsite dose and for Main Control Room dose
- ICRP30 Dose Conversion Factors
- Analysis to provide fuel failure percentage corresponding to SRP limits

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Open Discussion

NRC feedback:

- recommendations/suggestions?
- submittal templates?
- Power Uprate Standard Review Plan items?