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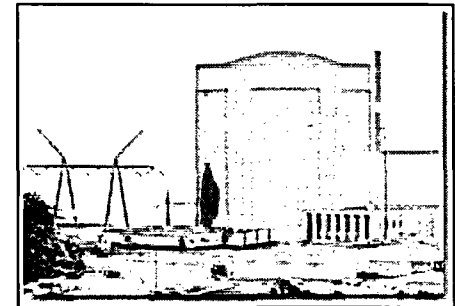


ALTERNATIVE SOURCE TERM

Pre-Submittal Meeting

Palisades Nuclear Plant

August 2, 2006



PALISADES NUCLEAR PLANT ALTERNATIVE SOURCE TERM

NMC ATTENDEES

- **John Broschak** **Engineering Director**
- **Ed Weinkam** **Licensing & Reg. Svcs. Director**
- **Gabor Salamon** **Licensing Manager**
- **Brian Brogan** **Engineering Programs**
- **Jeff Voskuil** **Engineering Programs**
- **Amy Hazelhoff** **Licensing**
- **Jesus (Jay) Arias** **Licensing**

PALISADES NUCLEAR PLANT ALTERNATIVE SOURCE TERM

PURPOSE OF PRE-SUBMITTAL MEETING

- Common understanding of the proposed scope of the Palisades application
- Understand the level of detail of information expected in the application
- Gain understanding regarding regulatory positions on specific issues

PALISADES NUCLEAR PLANT ALTERNATIVE SOURCE TERM

AGENDA

- **Reason for Adopting the Alternate Source Term**
- **Scope of Implementation**
- **Overview of Changes to the Licensing Basis**
- **Specific Aspects of the Analyses**
- **Submittal Content**
- **Schedules**
- **Summary**

PALISADES NUCLEAR PLANT ALTERNATIVE SOURCE TERM

REASON FOR ADOPTING ALTERNATE SOURCE TERM

- To update the Palisades accident dose analyses following the guidance provided in Regulatory Guide 1.183

PALISADES NUCLEAR PLANT ALTERNATIVE SOURCE TERM

SCOPE OF IMPLEMENTATION

- Full scope implementation
- Limiting accidents analyzed:
 - Loss-of-Coolant Accident (LOCA)
 - Fuel Handling Accident (FHA)
 - Main Steam Line Break (MSLB)
 - Steam Generator Tube Rupture (SGTR)
 - Control Rod Ejection (CRE)
 - Small Line Break Outside Containment (SLBOC)
 - Spent Fuel Cask Drop (SFCD)
- Other Palisades UFSAR Chapter 14 events

PALISADES NUCLEAR PLANT ALTERNATIVE SOURCE TERM

OVERVIEW OF LICENSING BASIS CHANGES

- Revise radiological consequences for limiting accidents
 - TEDE acceptance criterion
 - Revised assumptions
 - Revised results
- Change Palisades Technical Specifications
 - Definition of Dose Equivalent I-131 in TS Section 1.1

PALISADES NUCLEAR PLANT ALTERNATIVE SOURCE TERM

SPECIFIC ASPECTS OF THE ANALYSES

- AST analysis philosophy
- Analysis Differences
 - Palisades-specific source term inventories
 - Updated control room X/Q
 - Updated offsite X/Q
 - Updated control room breathing rates

PALISADES NUCLEAR PLANT ALTERNATIVE SOURCE TERM

SPECIFIC ASPECTS OF THE ANALYSES

- Analysis Differences (continued)
 - Lower control room envelope unfiltered in-leakage for limiting events
 - Single containment release scenario for control rod ejection

PALISADES NUCLEAR PLANT ALTERNATIVE SOURCE TERM

SPECIFIC ASPECTS OF THE ANALYSES

- Analysis Differences (continued)
 - MHA/LOCA
 - Plant configuration
 - Reduced containment spray flow rate
 - Effect of low pH SIRWT water on iodine volatile fraction to justify airborne fraction $<10\%$
 - Termination of SIRWT isolation valve back-leakage
 - Lower SIRWT recirc valve back-leakage

PALISADES NUCLEAR PLANT ALTERNATIVE SOURCE TERM

SPECIFIC ASPECTS OF THE ANALYSES

- Assumptions requiring plant modifications
 - Lower control room envelope unfiltered in-leakage
 - Termination of SIRWT isolation valve back-leakage
 - Lower SIRWT recirc valve leakage

PALISADES NUCLEAR PLANT ALTERNATIVE SOURCE TERM

SPECIFIC ASPECTS OF THE ANALYSES

- Palisades Summary of Alternative Source Term Analysis Results

PALISADES NUCLEAR PLANT ALTERNATIVE SOURCE TERM

MHA/LOCA Results (rem)

TID Analysis

AST Analysis

Thyroid

Whole Body

TEDE

LPZ

10.0

0.1

3.4

EAB

18.1

0.3

13.2

CR

21.3

2.7

4.2

PALISADES NUCLEAR PLANT ALTERNATIVE SOURCE TERM

FHA Results (rem)

TID Analysis

AST Analysis

Thyroid

Whole Body

TEDE

LPZ

8.7

<0.1

0.3

EAB

53.6

0.2

2.2

CR

19.7

<0.1

4.0

PALISADES NUCLEAR PLANT ALTERNATIVE SOURCE TERM

MSLB Results (rem)

TID Analysis

AST Analysis

Thyroid

Whole Body

TEDE

LPZ

4.0

<0.1

0.8

EAB

15.7

<0.1

2.5

CR

11.8

<0.1

4.98

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PALISADES NUCLEAR PLANT ALTERNATIVE SOURCE TERM

SGTR Results (rem)

TID Analysis

AST Analysis

Thyroid

Whole Body

TEDE

LPZ

0.7

0.1

0.2

EAB

4.3

1.6

1.2

CR

5.6

<0.1

3.8



PALISADES NUCLEAR PLANT ALTERNATIVE SOURCE TERM

CRE Results (rem)

TID Analysis

AST Analysis

Thyroid

Whole Body

TEDE

LPZ

11.5

0.2

0.7

EAB

22.7

0.3

2.7

CR

23.9

0.4

1.1

PALISADES NUCLEAR PLANT ALTERNATIVE SOURCE TERM

SLBOC Results (rem)

TID Analysis

AST Analysis

Thyroid

Whole Body

TEDE

LPZ

0.8

<0.1

0.1

EAB

4.8

0.1

0.4

CR

5.7

<0.1

0.5

PALISADES NUCLEAR PLANT ALTERNATIVE SOURCE TERM

SFCD Results (rem)

	TID Analysis		AST Analysis
	Thyroid	Whole Body	TEDE
LPZ	8.3	<0.1	0.3
EAB	51.2	0.3	2.0
CR	8.2	<0.1	1.7

PALISADES NUCLEAR PLANT ALTERNATIVE SOURCE TERM

SUBMITTAL CONTENT

- Licensing technical report summarizing assumptions and analyses
- Accident analyses input parameter and results tables
- RG 1.183 conformance table
- NRC RIS 2006-04 disposition table
- Meteorological data and accident analyses calculations in electronic form
- Information copies of mark-ups of affected pages of the Updated Final Safety Analyses Report
- TS change

PALISADES NUCLEAR PLANT ALTERNATIVE SOURCE TERM

SCHEDULES

- Submittal by August 31, 2006
- Implementation coincident with restart from 2007 Fall Refueling Outage

PALISADES NUCLEAR PLANT ALTERNATIVE SOURCE TERM

SUMMARY