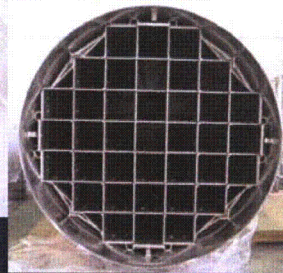


MAGNATRAN Pre-Submission

Closed Meeting

June 19, 2012



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Proprietary Information Withheld per 10 CFR 2.390

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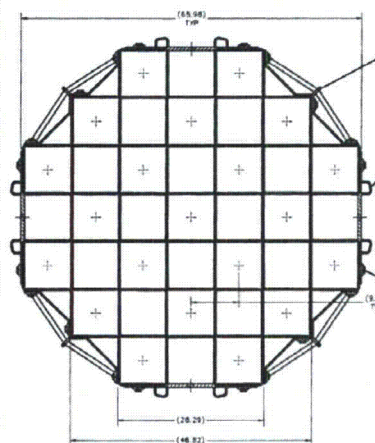


Slide 4

PWR Damaged Fuel Basket Geometry

Standard PWR

Damaged Fuel PWR

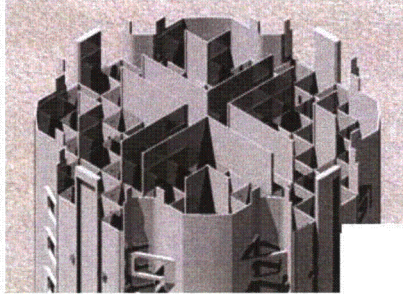


Proprietary Information
Withheld per 10 CFR 2.390



Slide 5

BWR Basket Top Plenum Assembly



Proprietary Information
Withheld per 10 CFR 2.390



Slide 6

MAGNATRAN Basket Assembly



Slide 7

Transport Basket Structural Evaluation

Proprietary Information Withheld per 10 CFR 2.390



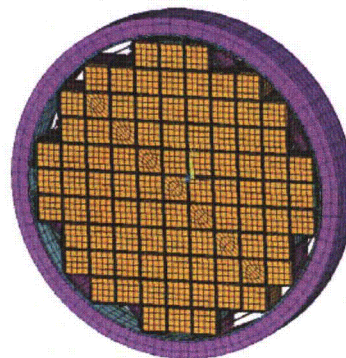
Slide 8

Transport Basket Structural Evaluation (cont'd)

Proprietary Information
Withheld per 10 CFR 2.390

- Multiple orientations are evaluated

BWR basket
stability model
(0° orientation)



Slide 9



Transport Basket Structural Evaluation

(cont'd)

Weldments to permit
relative motion as analyzed
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Proprietary Information Withheld per 10 CFR 2.390



Slide 10



Impact Limiter Evaluation

Proprietary Information Withheld per 10 CFR 2.390



Slide 11



Impact Limiter Evaluation (cont'd)

Proprietary Information Withheld per 10 CFR 2.390



Slide 12



Impact Limiter Evaluation (cont'd)

Proprietary Information Withheld per 10 CFR 2.390



Slide 13



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Slide 14



NAC RSI/GO structural responses

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- Basket stress tables were reviewed & revised
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Proprietary Information Withheld per 10 CFR 2.390

- Calculation package shows plots of the impact limiter deformation
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Fuel Gap Variation

Proprietary Information Withheld per 10 CFR 2.390



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Example Fuel Lengths

Proprietary Information Withheld per 10 CFR 2.390



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Fuel Assembly Evaluation

Proprietary Information Withheld per 10 CFR 2.390



Slide 18



Nonfuel Hardware

- RCCA spacer is used to maintain fuel position for criticality control

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Slide 19



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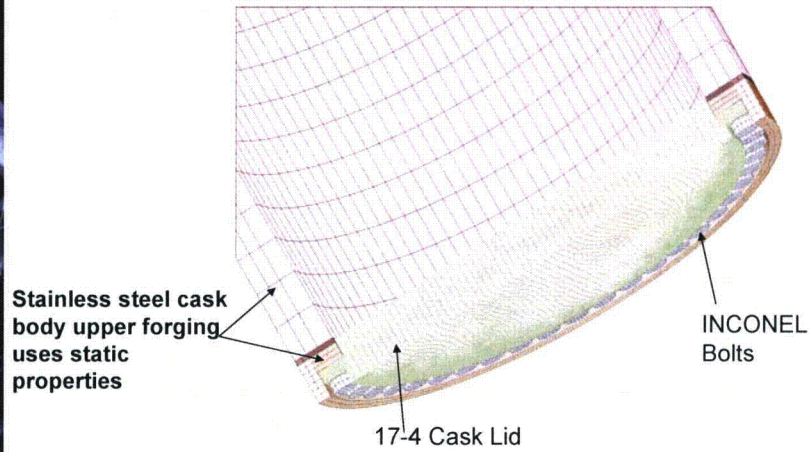
Finite Element Model

Proprietary Information Withheld per 10 CFR 2.390



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Lid/Forging/Bolt Models



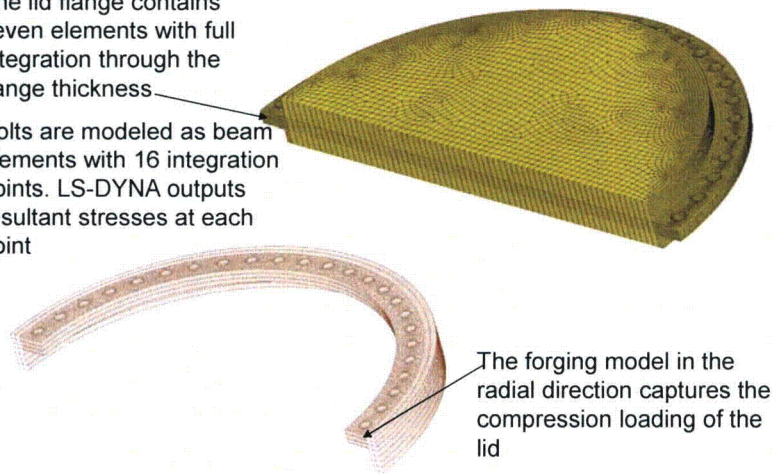
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Slide 22

Lid/Forging/Bolt Models (cont'd)

The lid flange contains seven elements with full integration through the flange thickness

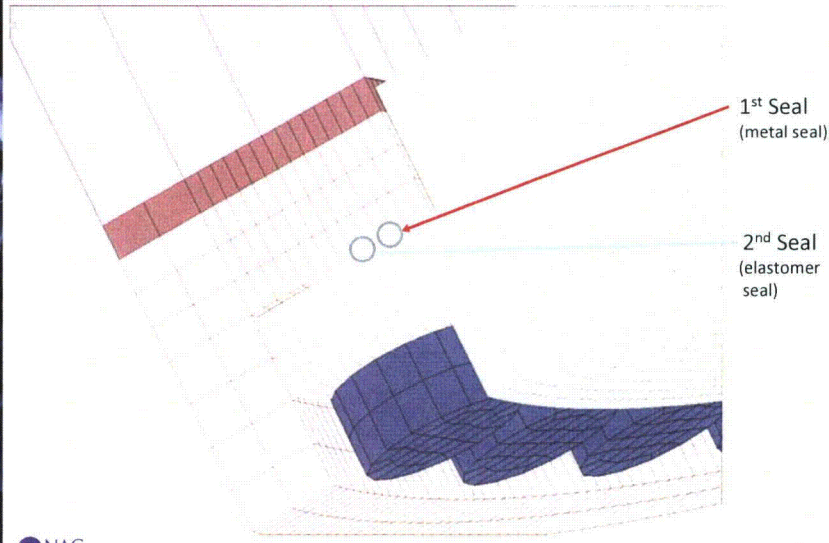
Bolts are modeled as beam elements with 16 integration points. LS-DYNA outputs resultant stresses at each point



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Slide 23

Cask Lid Seal Location



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Slide 24

Relative Displacement Between Seal and Lid for 30-Foot Drop

Proprietary Information Withheld per 10 CFR 2.390

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Slide 25

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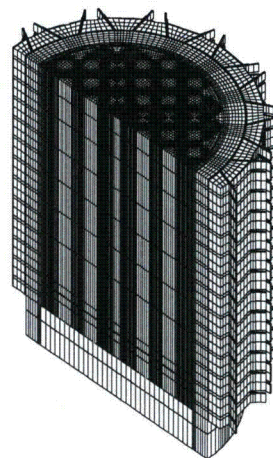
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Slide 26

Transport Thermal Evaluation

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BWR symmetry model



Slide 27



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Transport Cask Criticality Evaluations

Proprietary Information Withheld per 10 CFR 2.390



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Spent Fuel MCNP Benchmark

Proprietary Information Withheld per 10 CFR 2.390



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Depletion Code

Proprietary Information Withheld per 10 CFR 2.390



Slide 31



Depletion Code (cont'd)

Proprietary Information Withheld per 10 CFR 2.390



Slide 32



Horizontal Tilt

Proprietary Information Withheld per 10 CFR 2.390



Slide 33



RCCA Depletion

Proprietary Information Withheld per 10 CFR 2.390



Slide 34



RCCA Depletion (cont'd)

Proprietary Information Withheld per 10 CFR 2.390



Slide 35



MAGNATRAN Application Summary

- Proprietary – Nonproprietary versions
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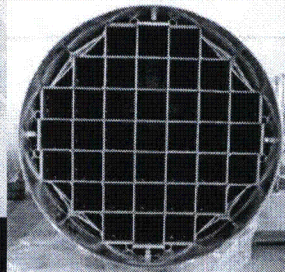
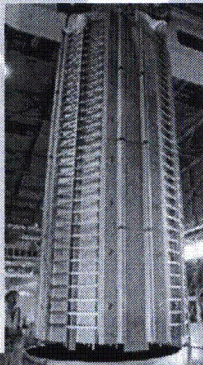


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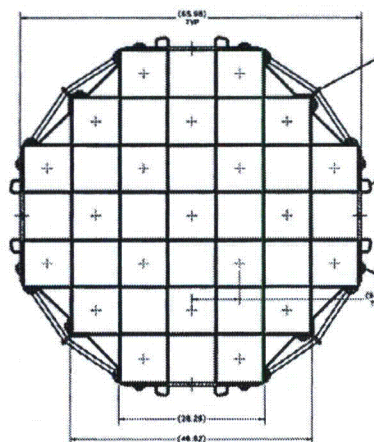


Slide 4

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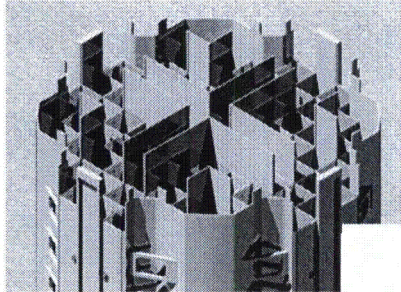


Proprietary Information
Withheld per 10 CFR 2.390



Slide 5

BWR Basket Top Plenum Assembly

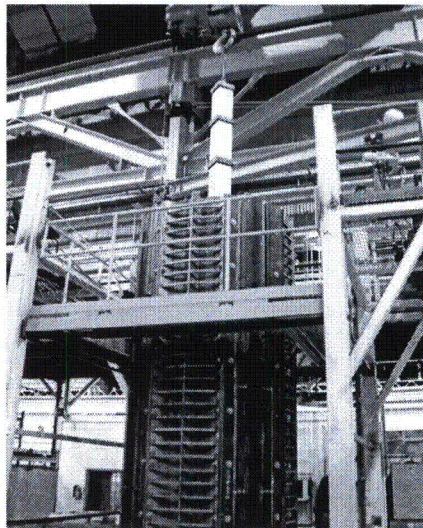


Proprietary Information
Withheld per 10 CFR 2.390

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Slide 6

MAGNATRAN Basket Assembly



 **NAC**
INTERNATIONAL

Slide 7

Transport Basket Structural Evaluation

Proprietary Information Withheld per 10 CFR 2.390



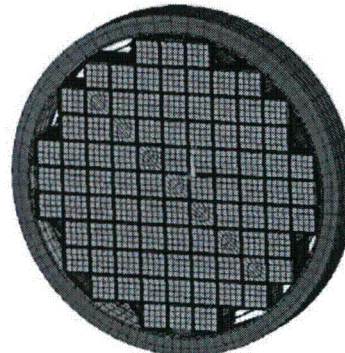
Slide 8

Transport Basket Structural Evaluation (cont'd)

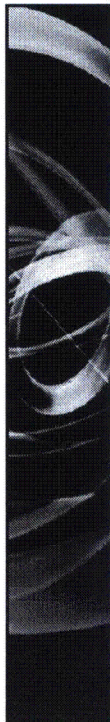
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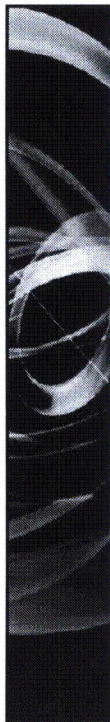
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Proprietary Information Withheld per 10 CFR 2.390



Slide 10



Impact Limiter Evaluation

Proprietary Information Withheld per 10 CFR 2.390



Slide 11



Impact Limiter Evaluation (cont'd)

Proprietary Information Withheld per 10 CFR 2.390



Slide 12



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Slide 13



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Slide 16



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Slide 17



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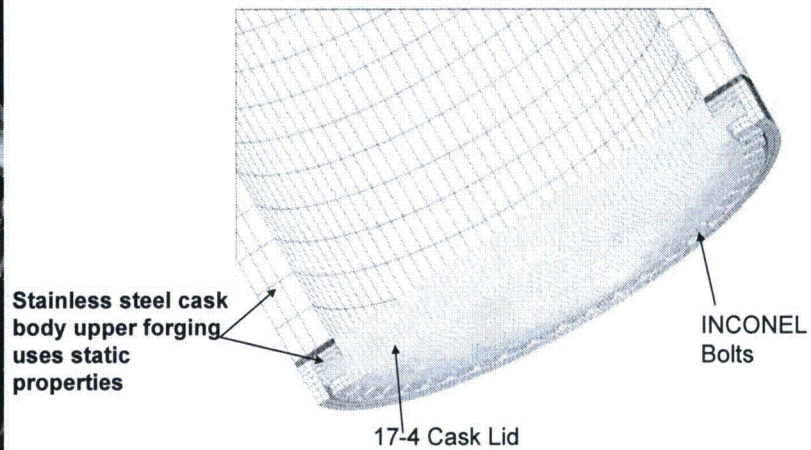
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Slide 21

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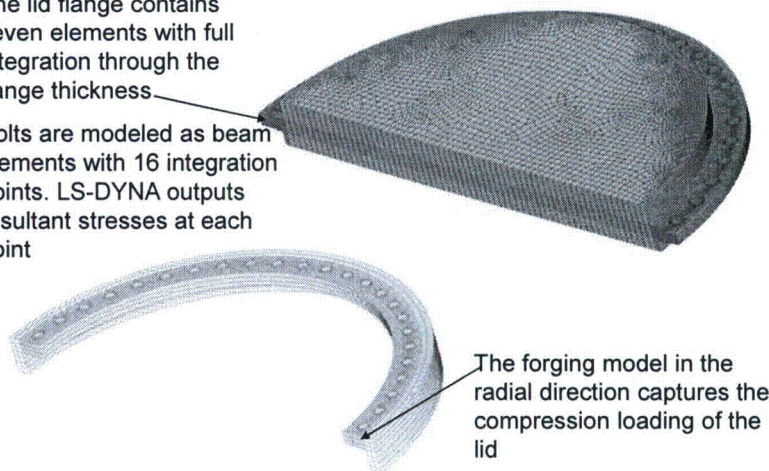
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Slide 22

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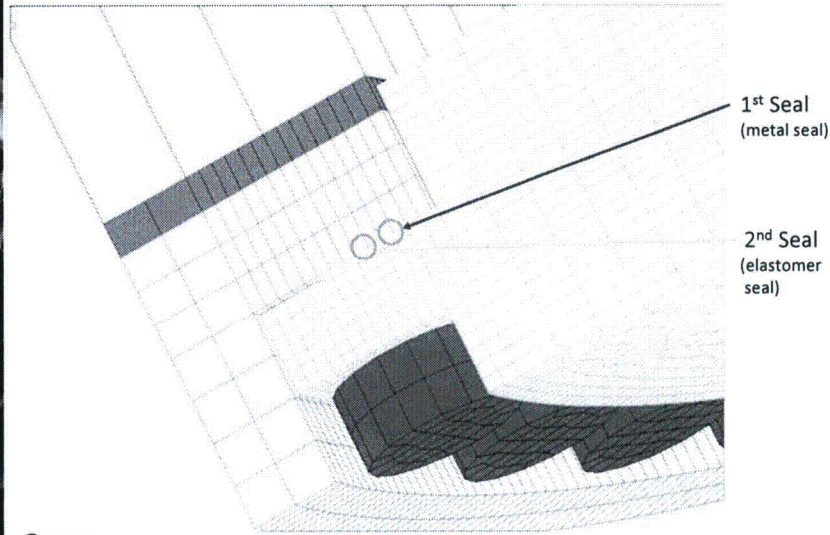
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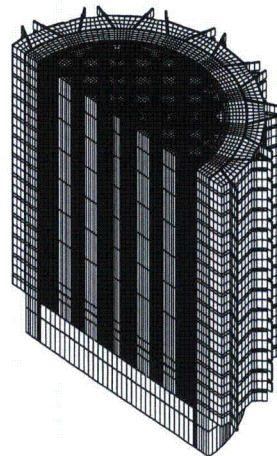
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Transport Cask Criticality Evaluations

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Spent Fuel MCNP Benchmark

Proprietary Information Withheld per 10 CFR 2.390



Depletion Code

Proprietary Information Withheld per 10 CFR 2.390



Depletion Code (cont'd)

Proprietary Information Withheld per 10 CFR 2.390



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Horizontal Tilt

Proprietary Information Withheld per 10 CFR 2.390



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RCCA Depletion

Proprietary Information Withheld per 10 CFR 2.390



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RCCA Depletion (cont'd)

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