



**NRC Amendment Applications Public Meeting
(Closed Session – 9:30am ‘till 3:00pm)**

Date: December 12, 2013

Docket Nos.: 71-9225, 71-9235, and 72-1031

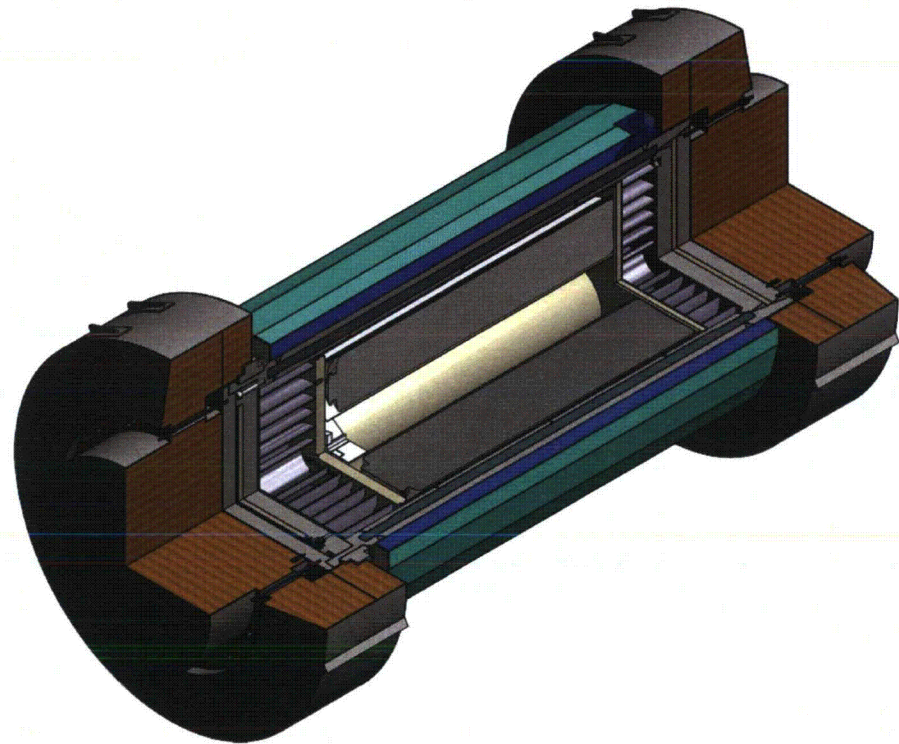


Agenda

- Detailed technical discussions of current amendment applications
 - NAC-STC WVDP-HLW and uncanisterized HBU fuel
 - MAGNASTOR Amendment 5
 - NAC-LWT HEUNL
- Closing remarks and discussion of any follow-up items

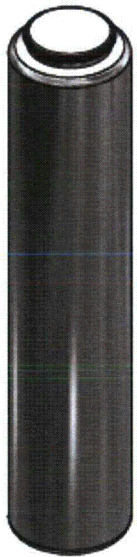
NAC-STC Application (WVDP-HLW)

- Key aspects of application
 - No modification made to cask body or lids
 - Revised cask cavity spacers position the overpack (i.e. TSC) in the cask body to:
 - Place overpack in an area of the cask body that provides the greatest radiation shielding
 - Retain center of gravity of previously evaluated and approved payloads

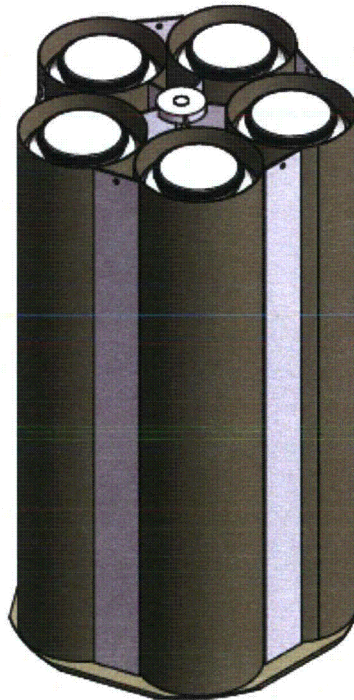


NAC-STC Application (WVDP-HLW) (cont.)

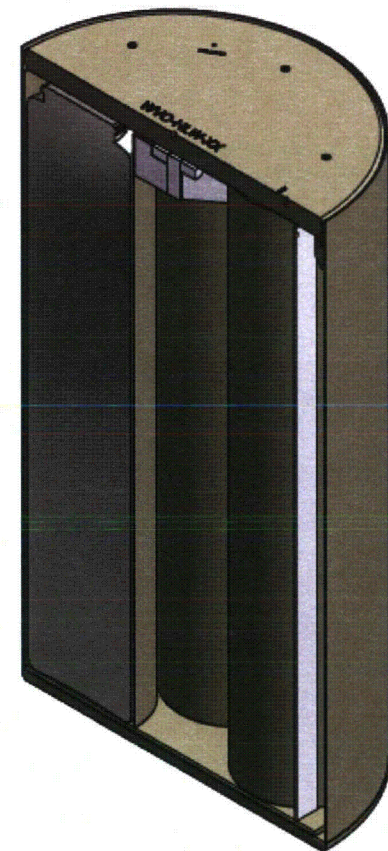
WVDP-HLW
Canister



Fully Loaded Basket w/
WVDP-HLW Canisters



Fully Loaded Basket w/in
WVDP Overpack



NAC-STC Application (WVDP-HLW) (cont.)

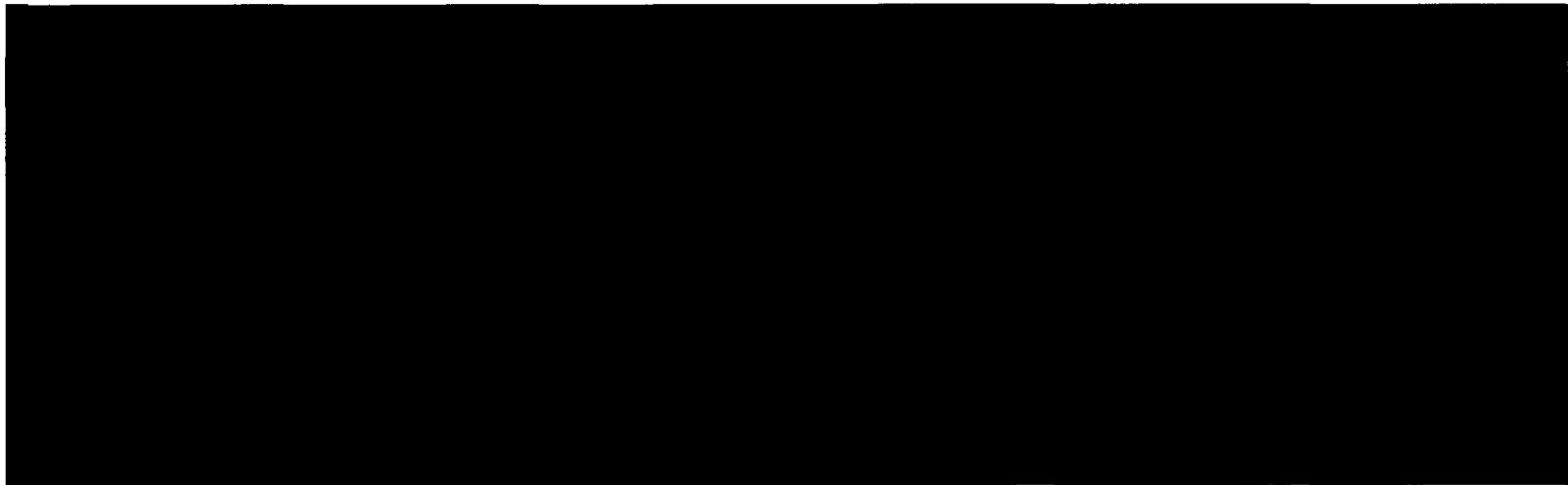
- No criticality evaluation performed since the quantity of fissile material is below 10 CFR Part 71 exemption limits
- The vitrified HLW glass matrix traps fissile material and any volatiles/gases that were released during reprocessing and glass formation
 - Cask body retained as leak tight boundary
 - No significant pressurization seen at leak tight boundaries
- Low heat load (< 2 kW per loaded overpack) and low radiation sources relative to previously approved STC payloads
 - Analyses demonstrate component temperatures are well below allowables
 - Dose rates are not significant relative to limits (e.g. < 1 mrem/hr. at 1 meter)

NAC-STC Application (WVDP-HLW) (cont.)

- Structural evaluations demonstrate that total weight and distribution is bounded by previously evaluated and approved payloads
 - Empty positions will be loaded with transport insert
- Due to the loading geometry and dimensions of the HLW canisters, they retain their position through all loading conditions
- Either Redwood or Balsa impact limiters may be used

NAC-STC Application (HBU Fuel)

- Key Aspects of High Burn-up Fuel
 - PWR 17x17 fuel, burnup from 45,000 – 60,000 MWd/MTU can be directly loaded into the STC without being placed in a damaged fuel can

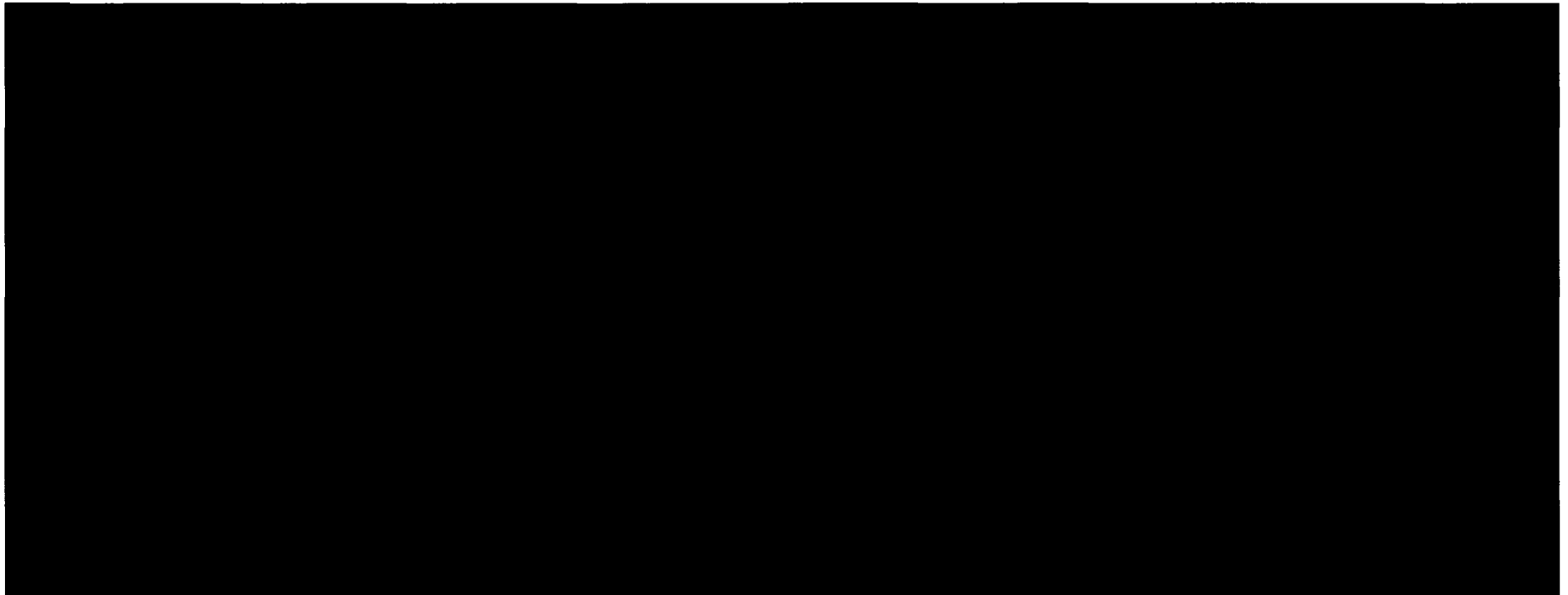


NAC-STC Application (HBU Fuel) (cont.)

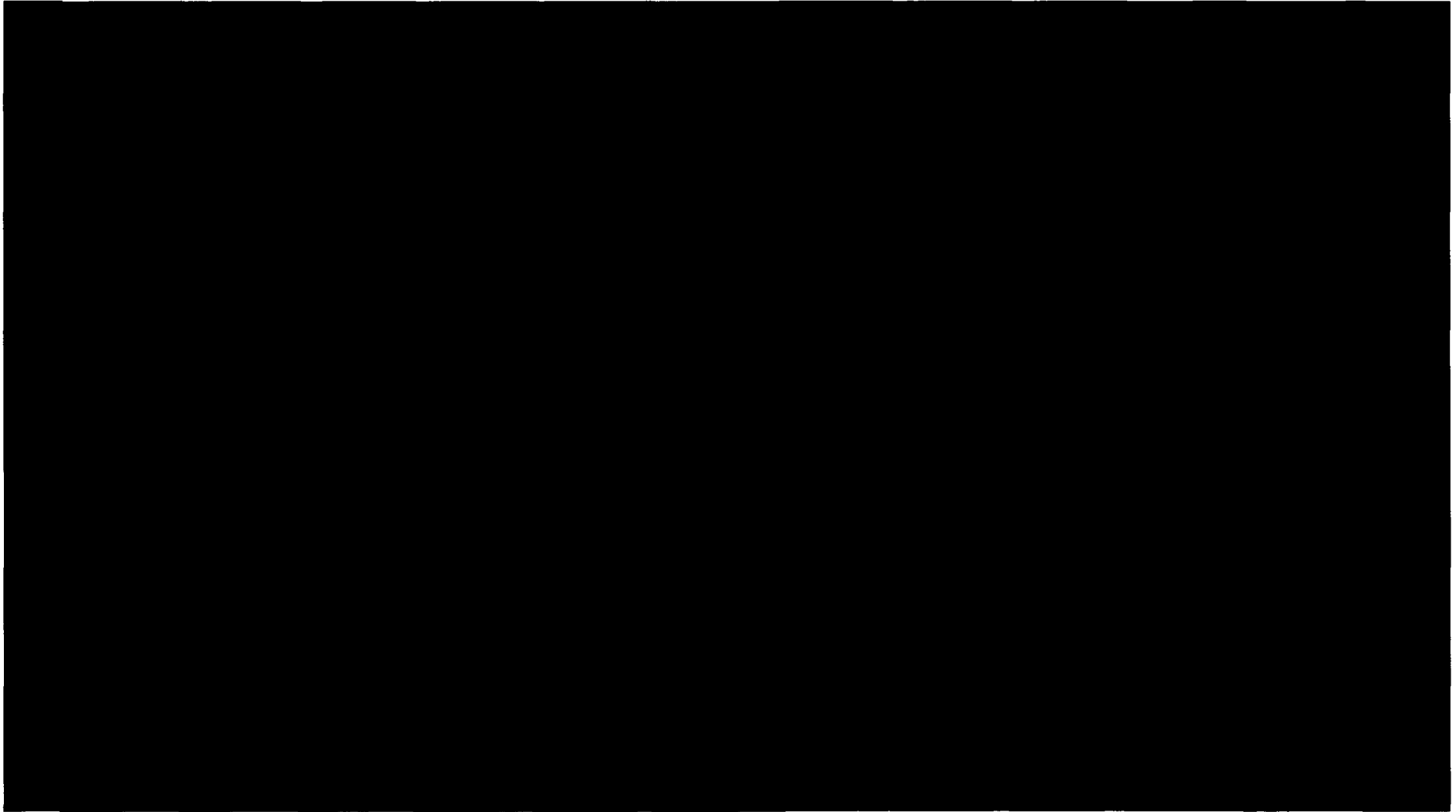
- Key Aspects of Increased Heat Load

- Basket tube design modified as an alternate basket to accommodate a slightly thicker MMC poison material

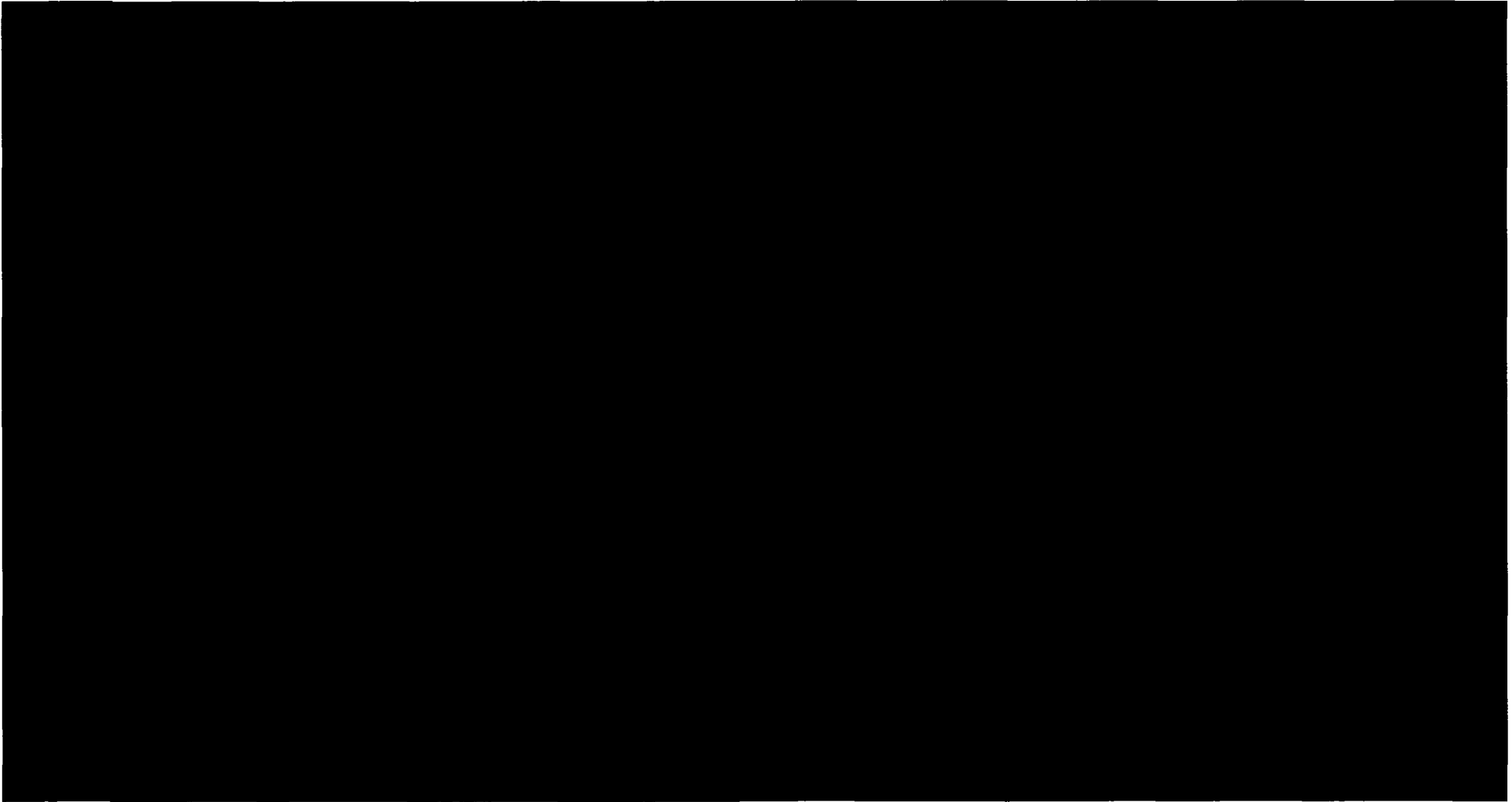
NAC-STC Application (HBU Fuel) (cont.)



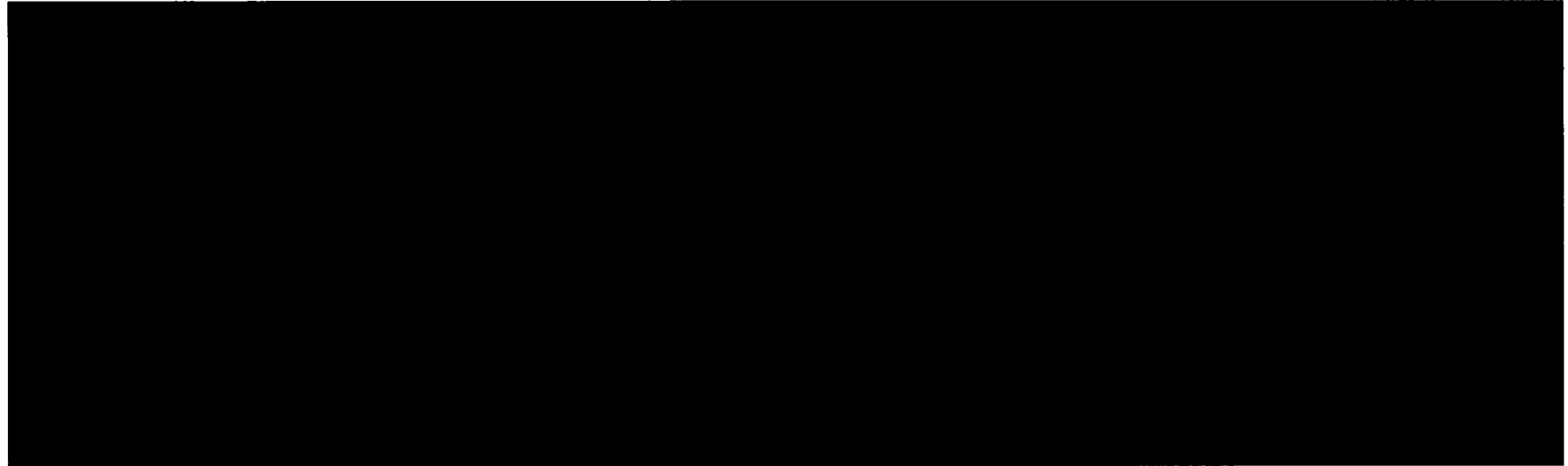
NAC-STC Application (HBU Fuel) (cont.)



MAGNASTOR Amendment 5 Application

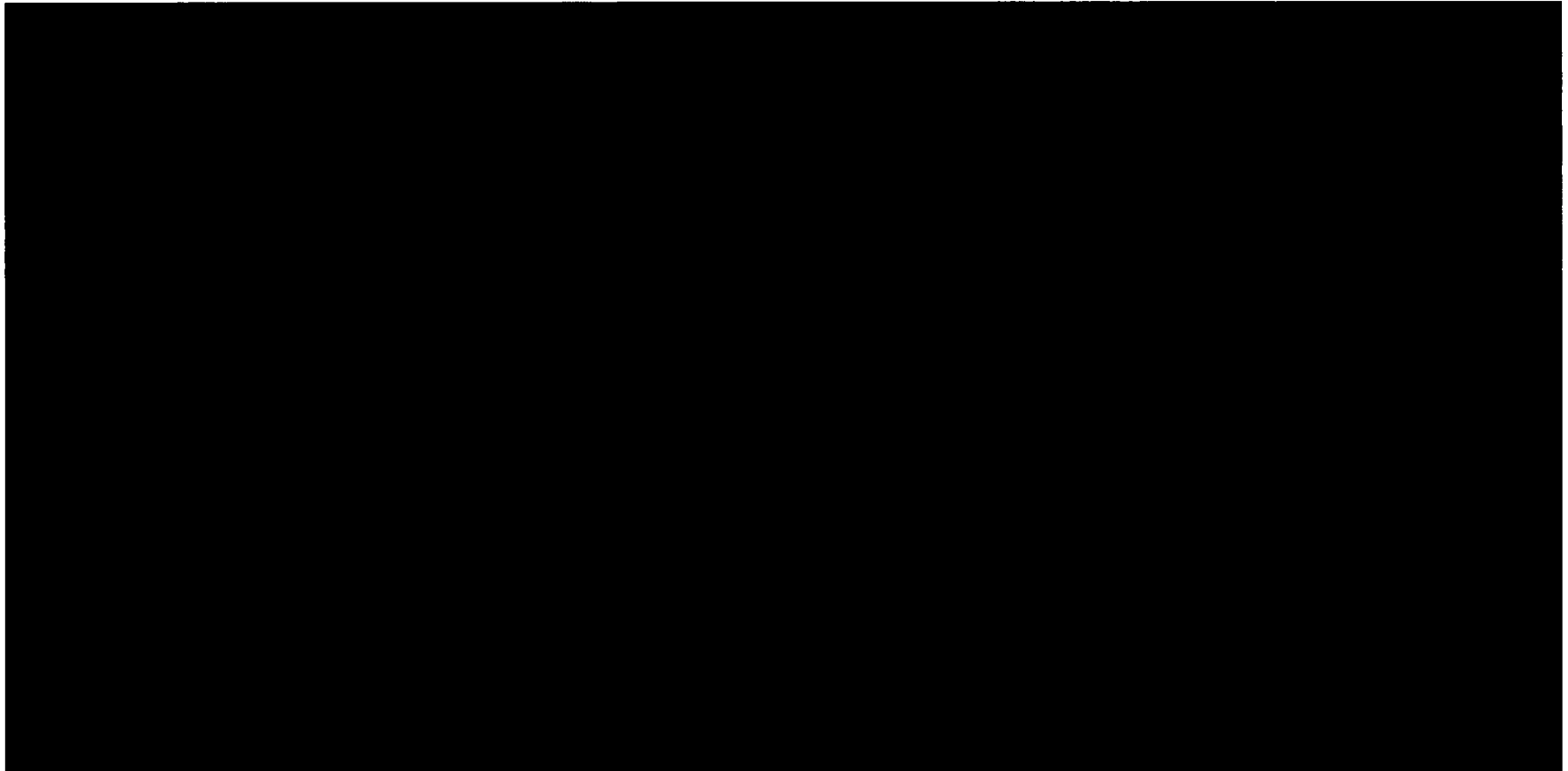


MAGNASTOR Amendment 5 Application (cont.)



MAGNASTOR Amendment 5 Application (cont.)

- Application may potentially include



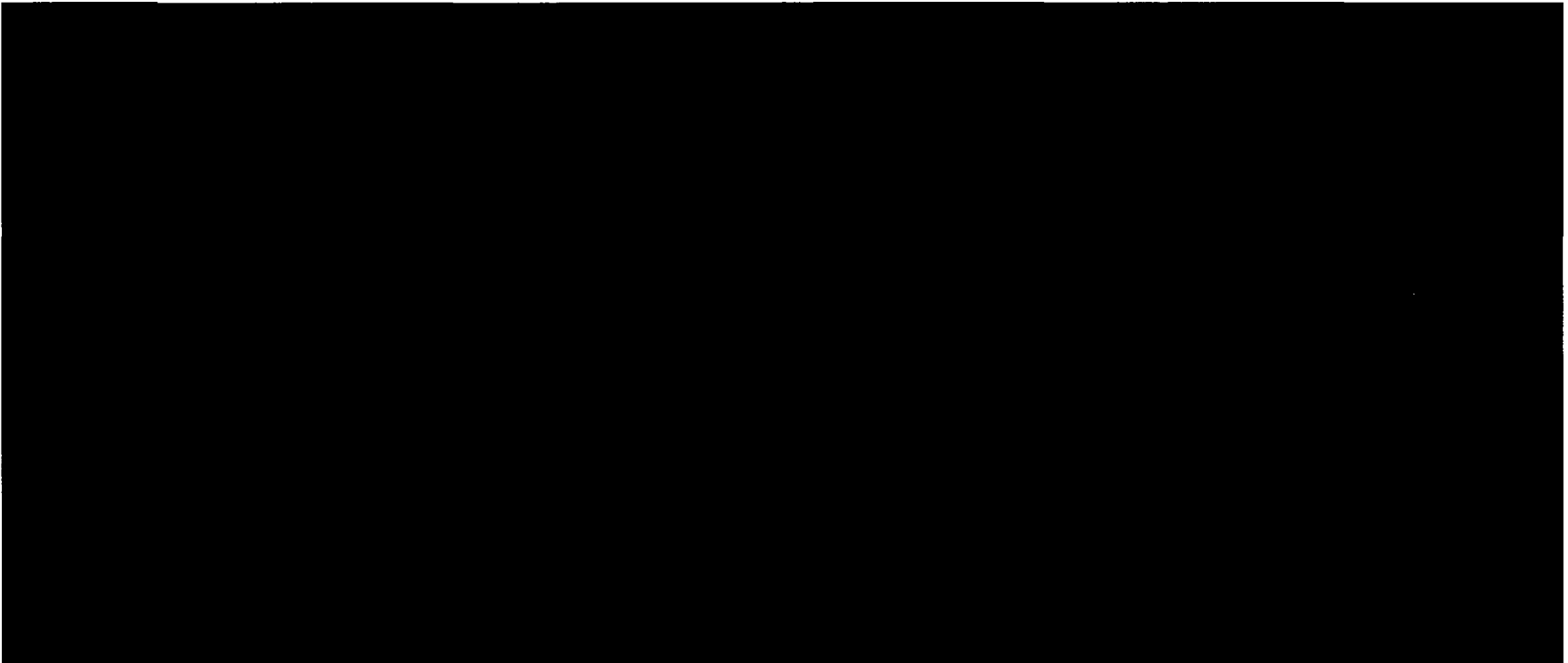
NAC-LWT HEUNL RAI Responses

- General overview before lunch
- Detailed review after lunch

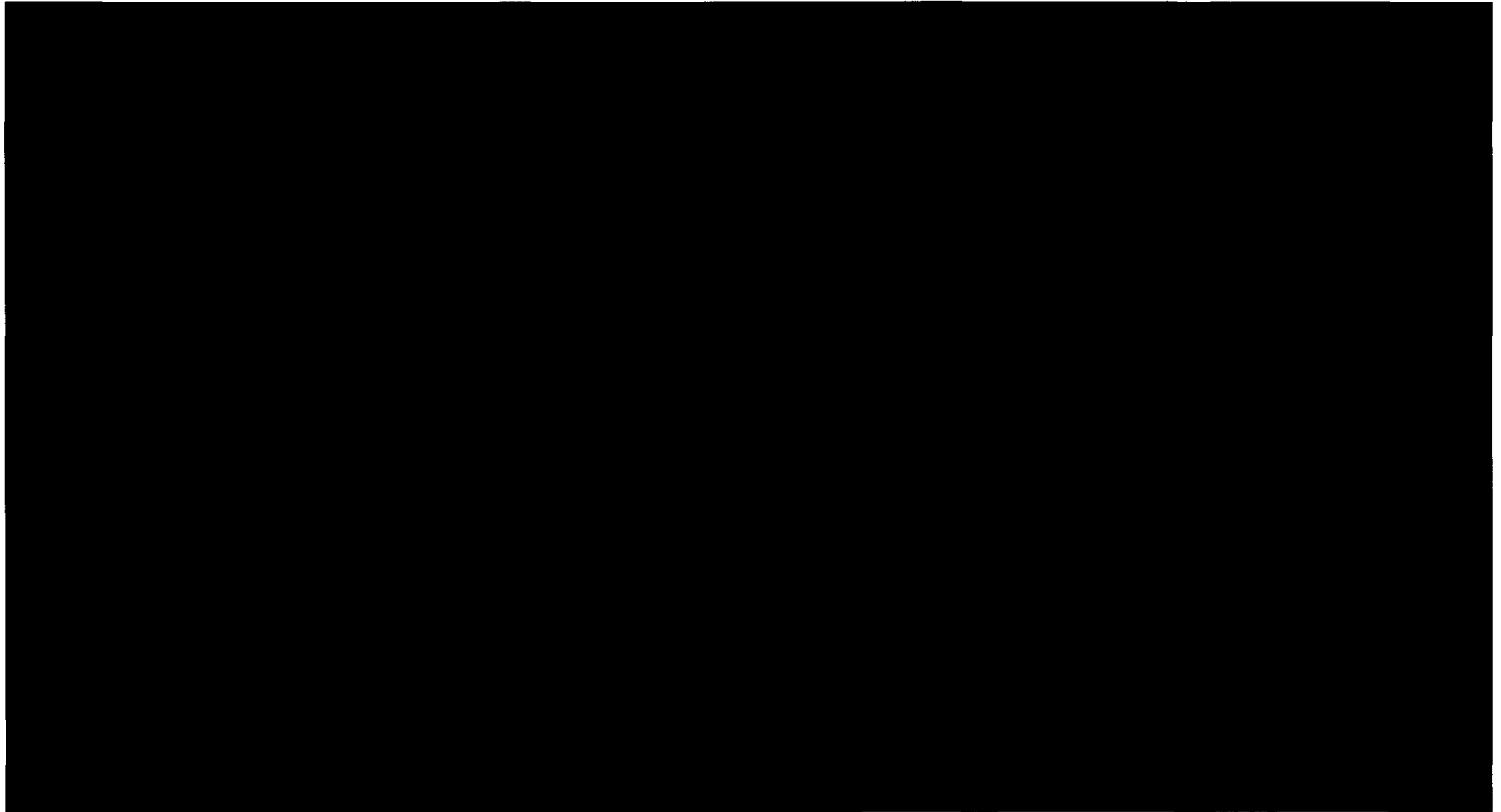
NAC-LWT HEUNL RAI Responses (cont.)

- General overview
 - In response to NRC RAIs, NAC revised several areas of the initial application
 - Areas primarily affected are those involving:
 - Material behavior as function of temperature (freezing) and resulting structural impacts
 - Corrosion
 - Gas generation
 - Minor modifications made to criticality evaluations
 - No RAIs on shielding; no revisions made

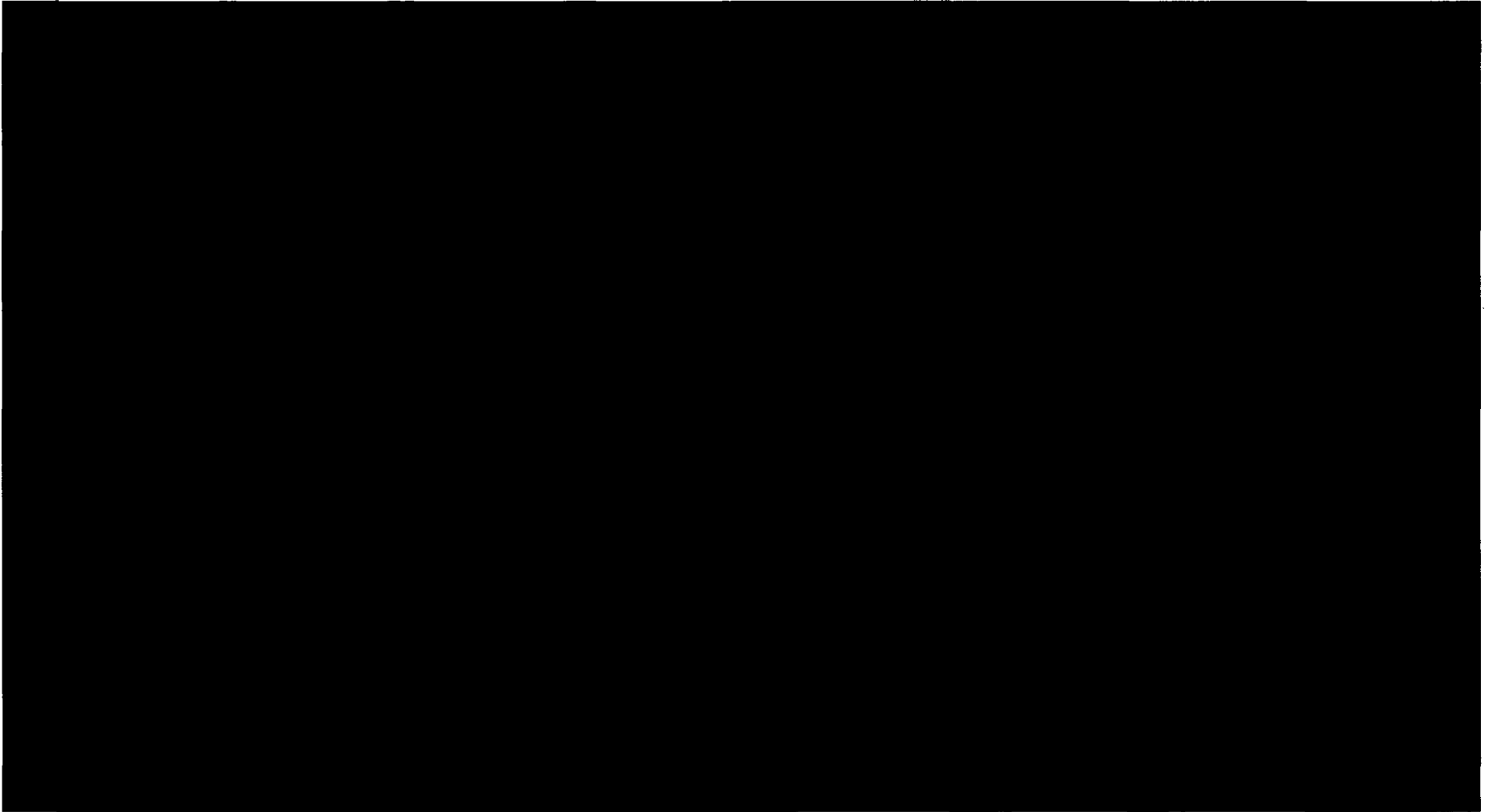
NAC-LWT HEUNL RAI Responses (cont.)



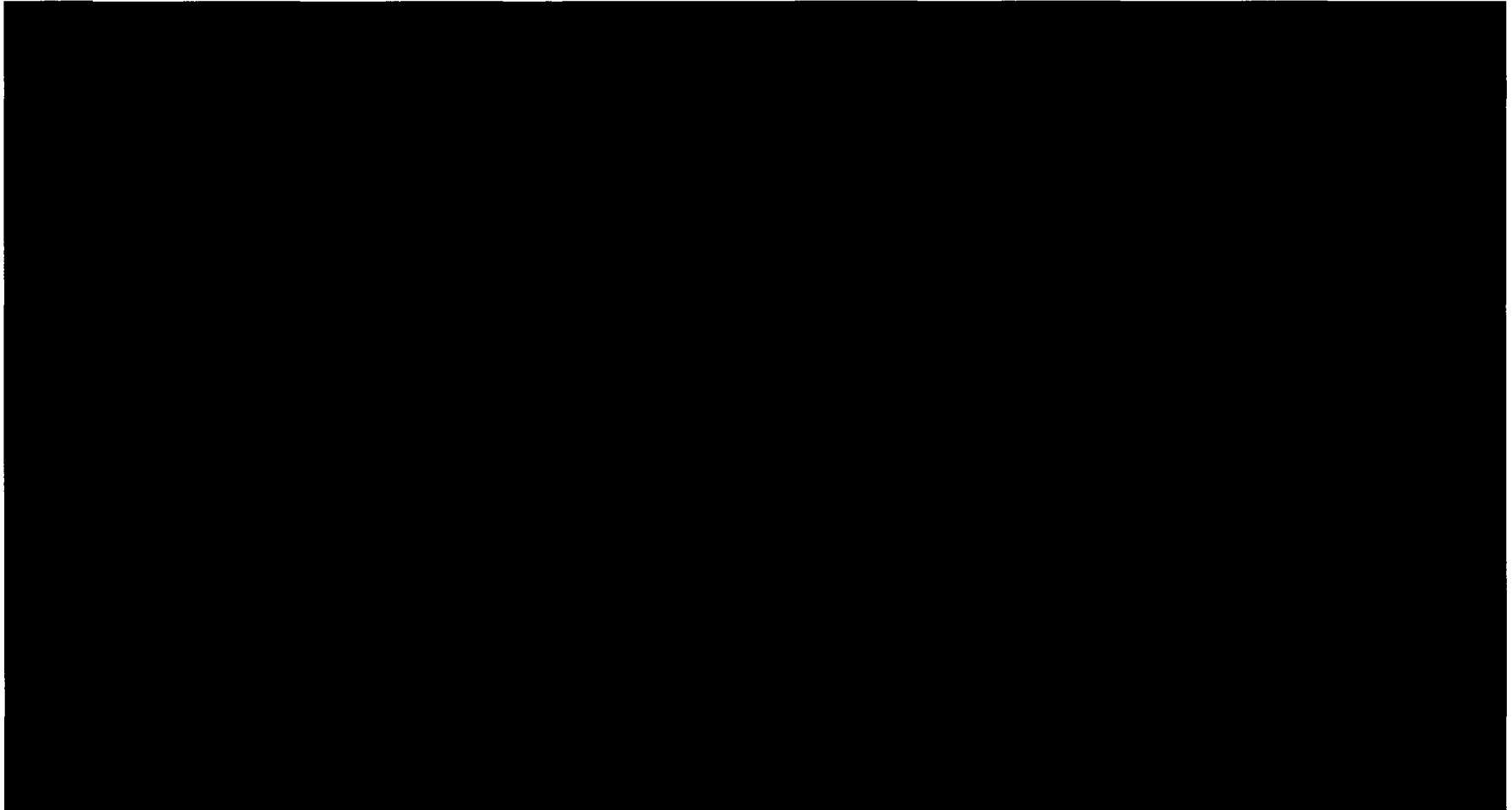
NAC-LWT HEUNL RAI Responses (cont.)



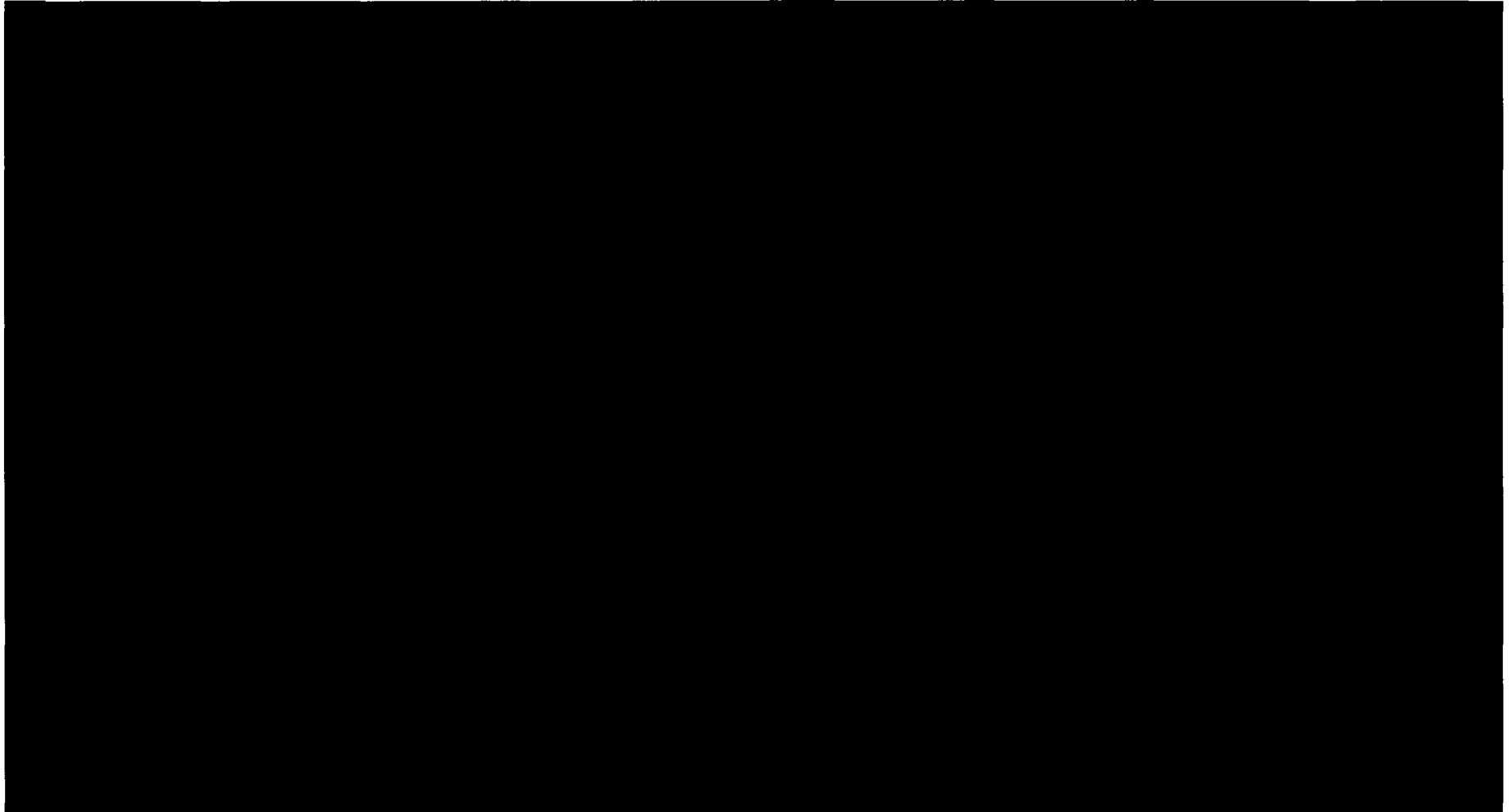
NAC-LWT HEUNL RAI Responses (cont.)



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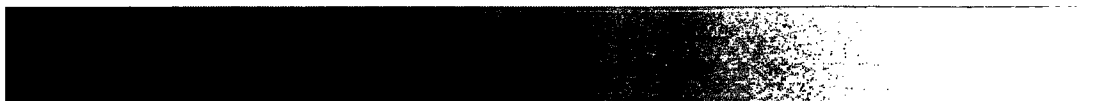
- Gas generation (Hydrogen content)
 - Transport cask must be evaluated for generation of combustible gases; in this case Hydrogen
 - NUREG-1609 limits content to 5% (volume)





Break for Lunch

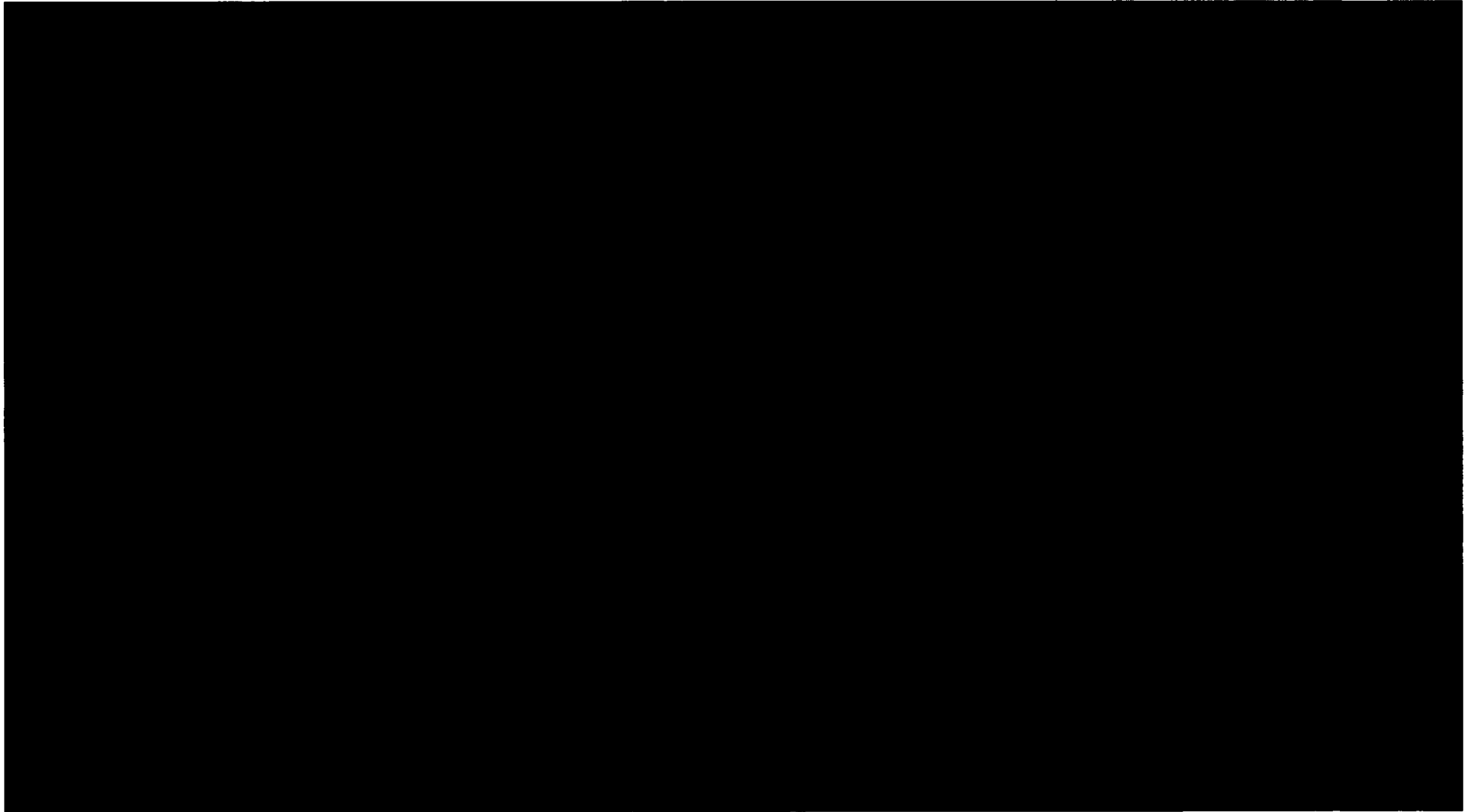
Detailed HEUNL review to follow



NAC-LWT HEUNL RAI Responses

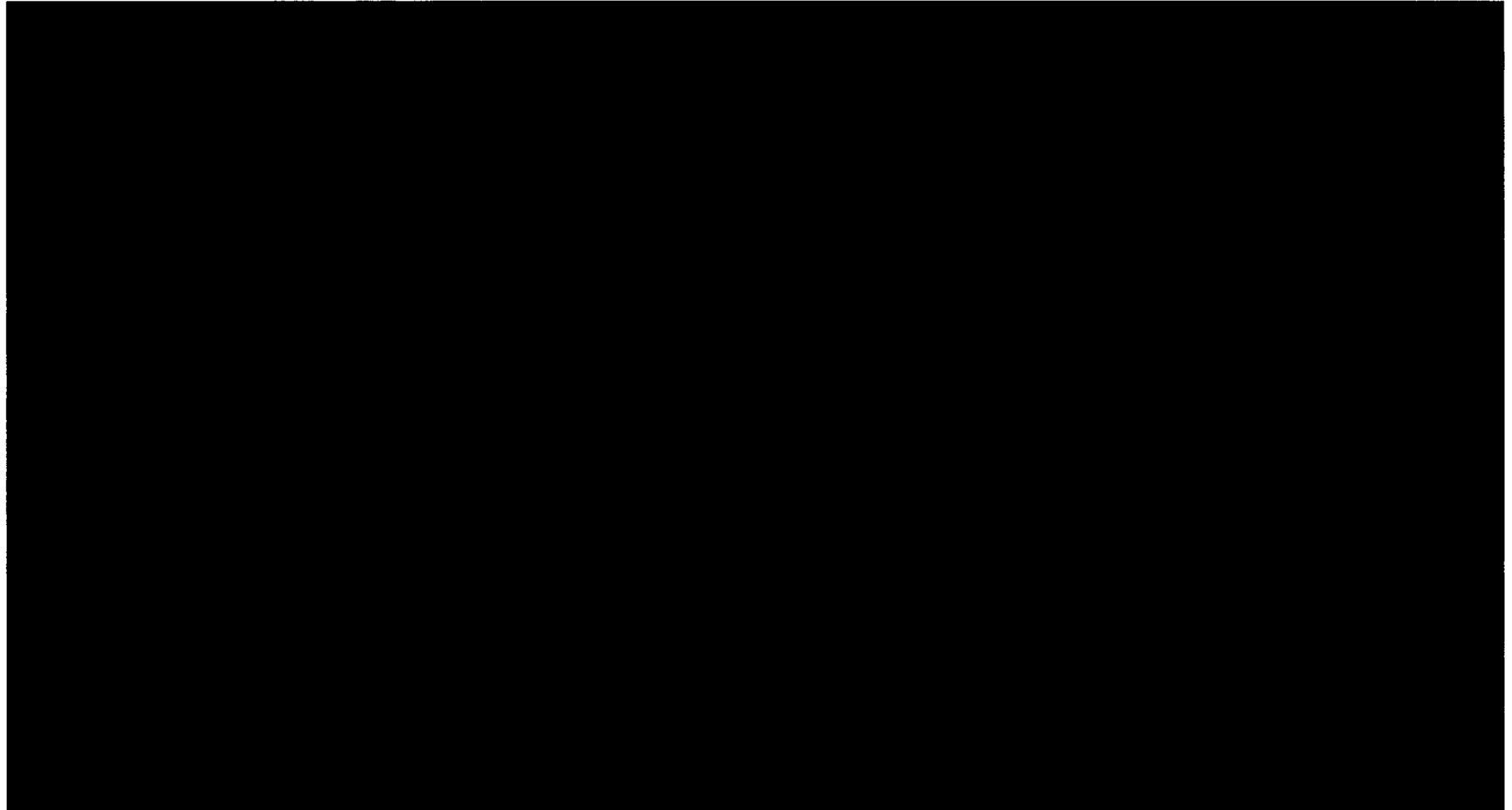
- Detailed review

NAC-LWT HEUNL - Structural

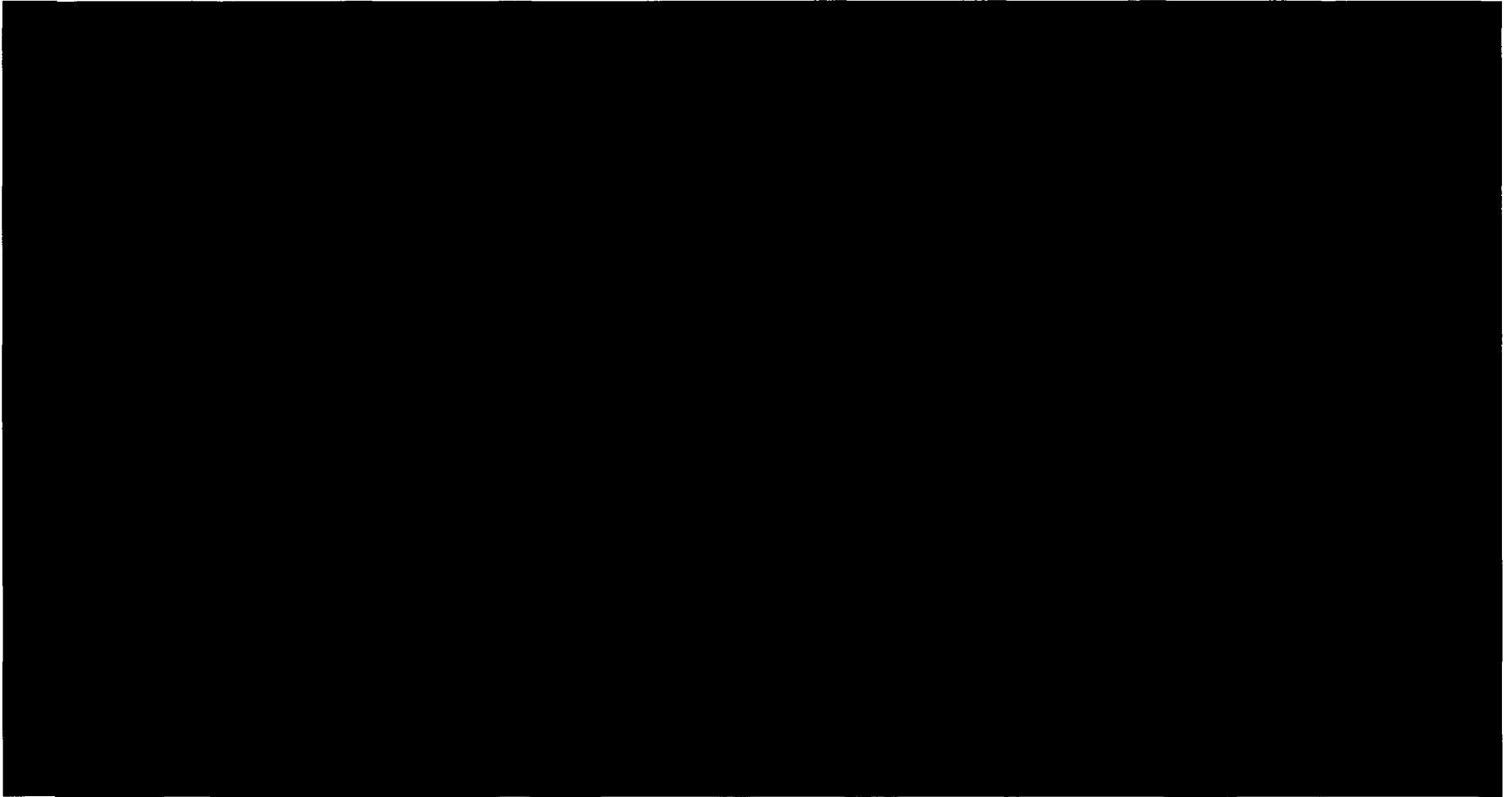


NAC-LWT HEUNL – Structural (cont.)

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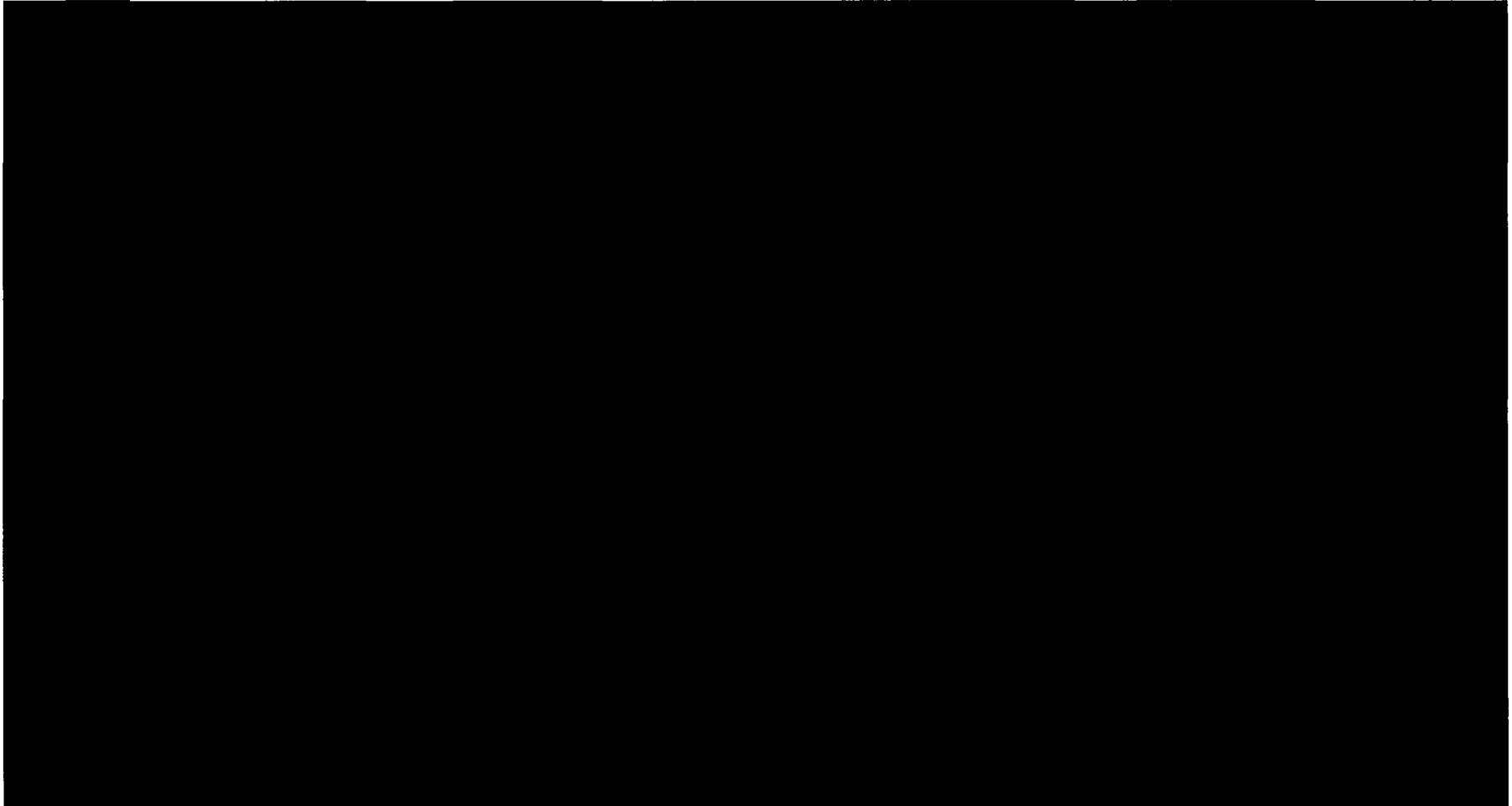
NAC-LWT HEUNL – Structural (cont.)



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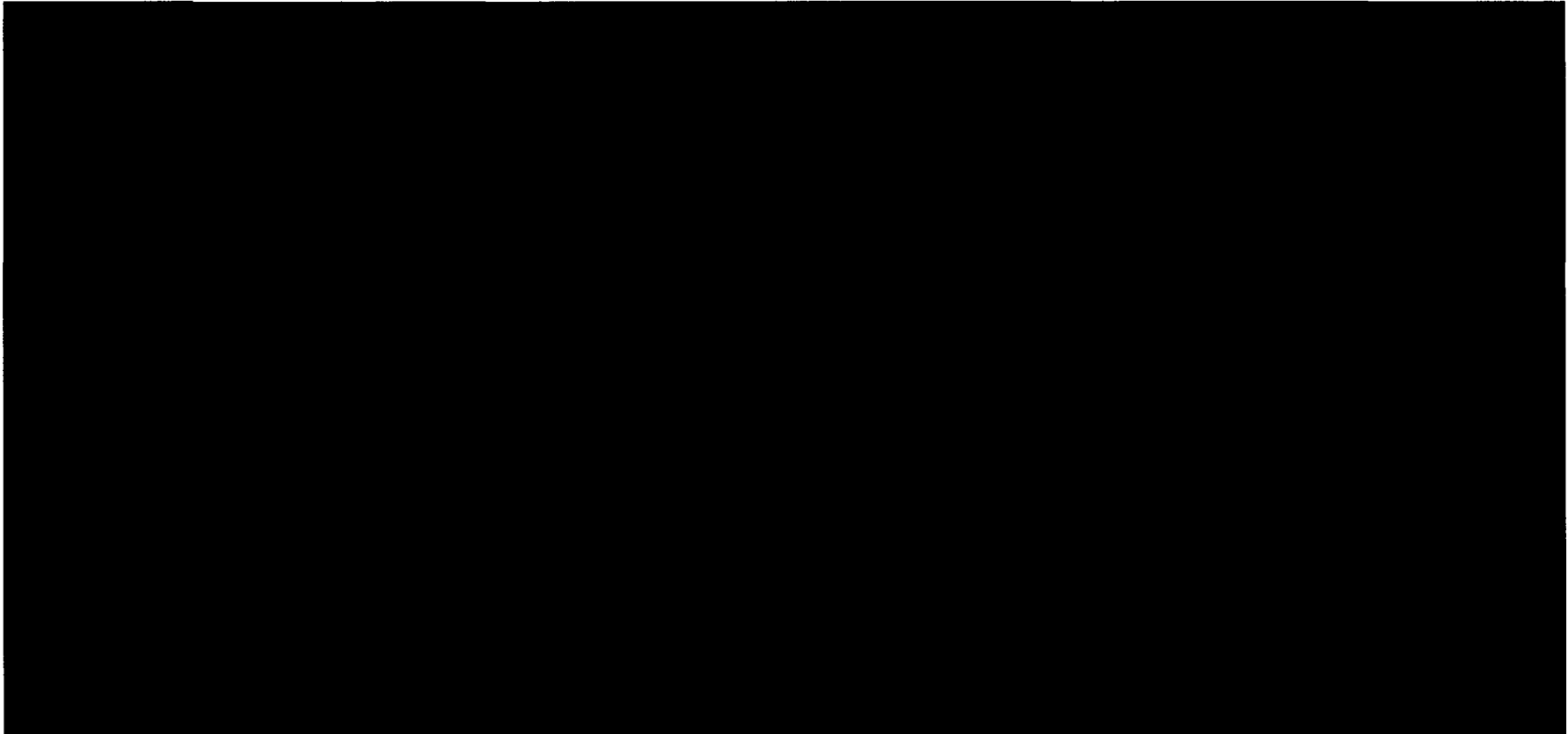
NAC-LWT HEUNL – Structural (cont.)



NAC-LWT HEUNL – Thermal

- Heat load for contents of 4 containers uses a bounding value of 12.9 Watts.
- For normal conditions of transport, the modeling of the ISO container, as described in the LWT SAR, is used.

NAC-LWT HEUNL – Thermal (cont.)

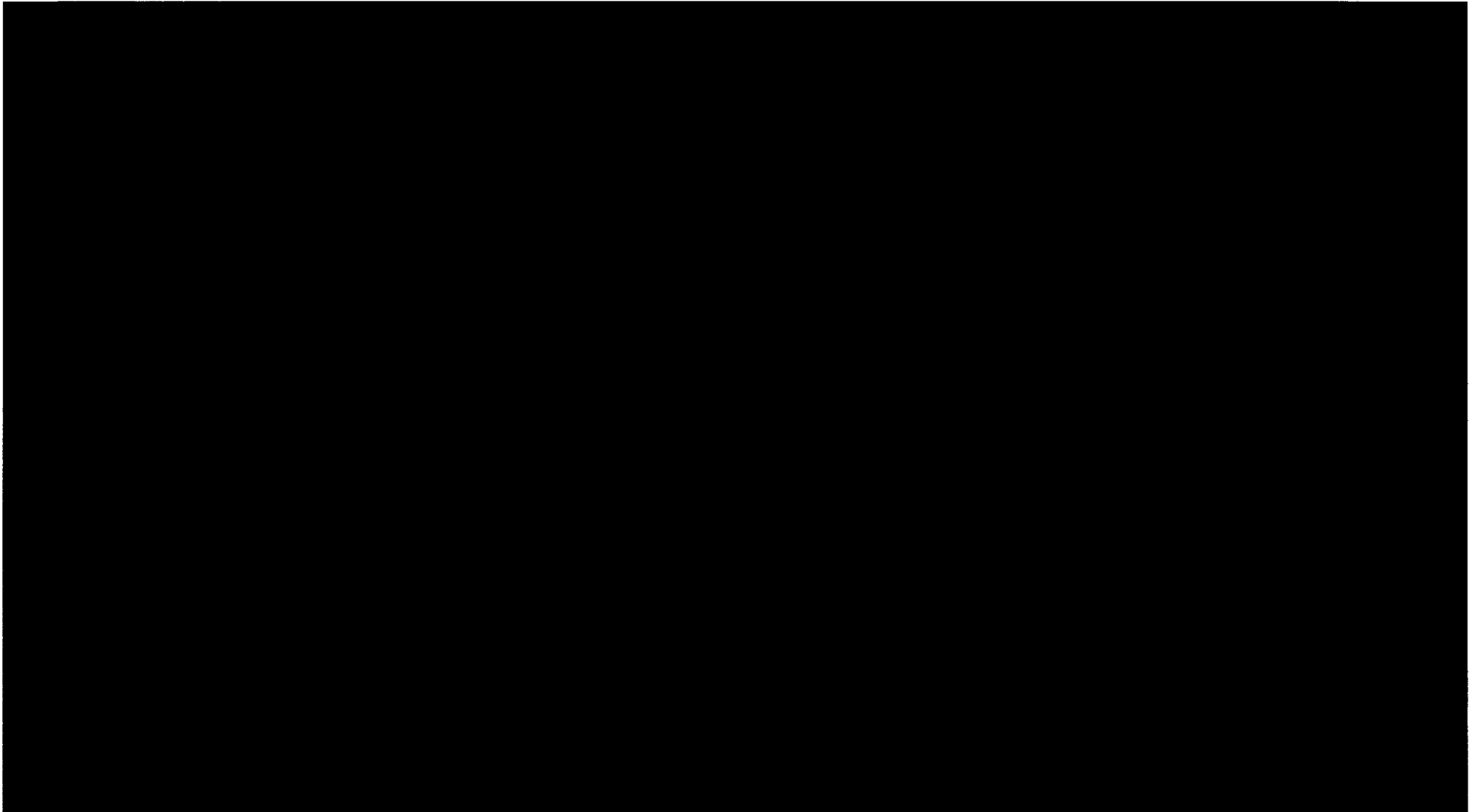


NAC-LWT HEUNL – Thermal (cont.)

NAC-LWT HEUNL – Thermal (cont.)

- 1475°F ambient
- Emissivity set to 0.9

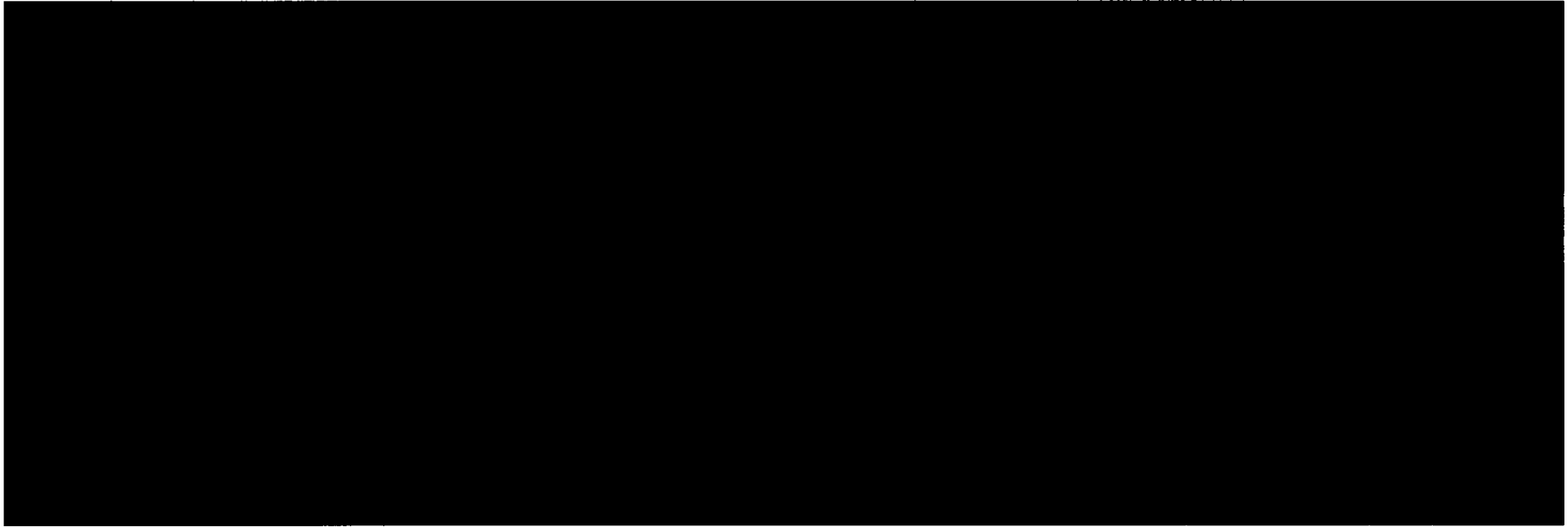
NAC-LWT HEUNL – Thermal (cont.)



NAC-LWT HEUNL – Operations

- Loading and unloading operations revised to address additional testing and sequencing
- Procedures revised to record container loading life and monitoring controls – corrosion limits

NAC-LWT HEUNL – Design/Manufacturing



CLOSING REMARKS and FOLLOW-UP ITEMS