

ENCLOSURE 4

Westinghouse Small Modular Reactor Piping Introductory Meeting
(Non-Proprietary)

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Westinghouse Small Modular Reactor Piping Introductory Meeting

Rockville, MD – February, 2014

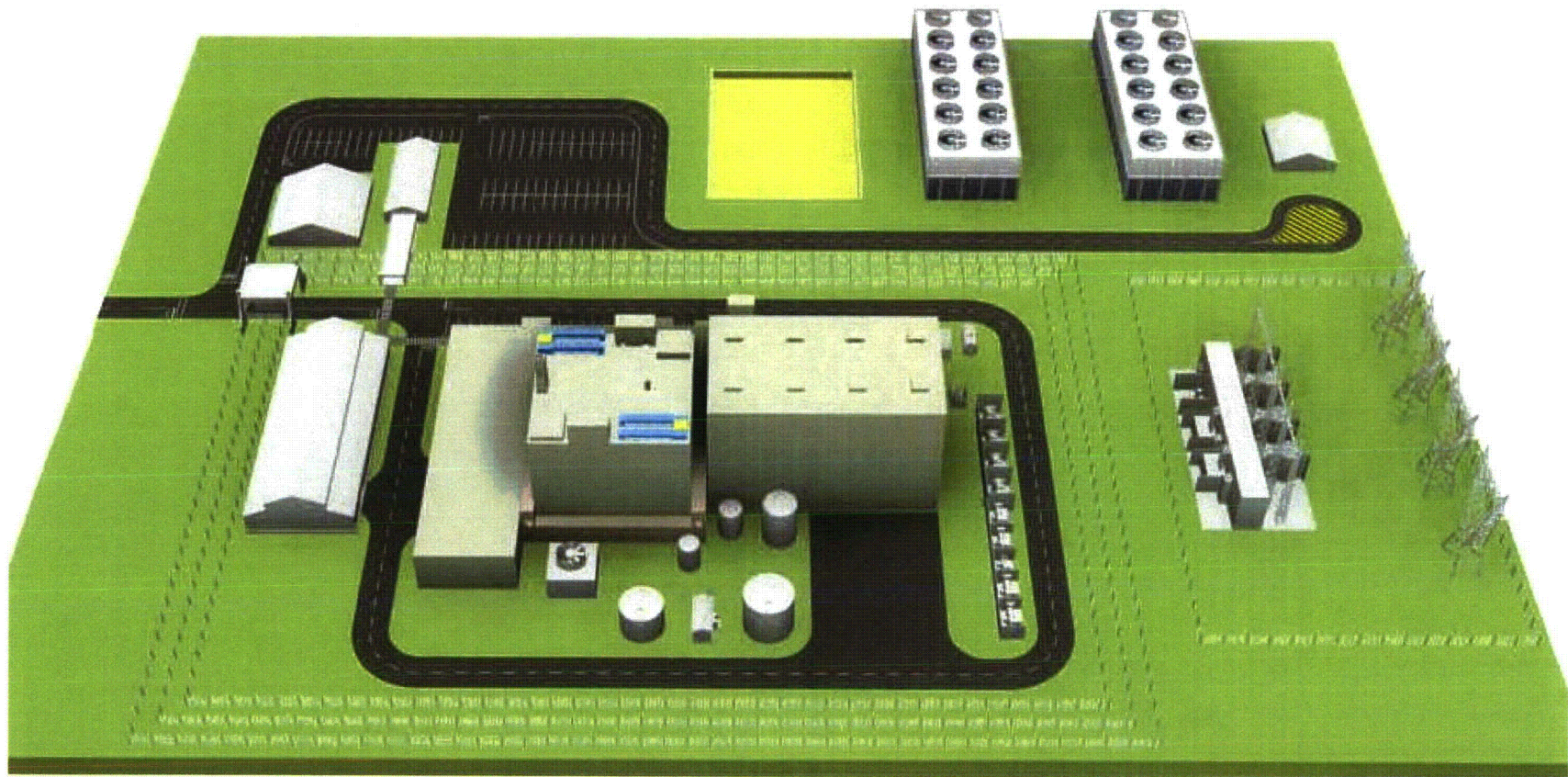


Agenda

1. Description of SMR Power Block and Nuclear Island
2. SMR Piping – Licensing Plan
 - Overview – Physical difference from the **AP1000**® plant
 - Leak Before Break (LBB)
 - Break Exclusion Zone (BEZ)
 - Penetration designs
 - CVS primary fluid outside containment
 - SMR Piping Philosophy
3. Closing Points

1. Description of SMR Power Block

Aerial View of the Plant

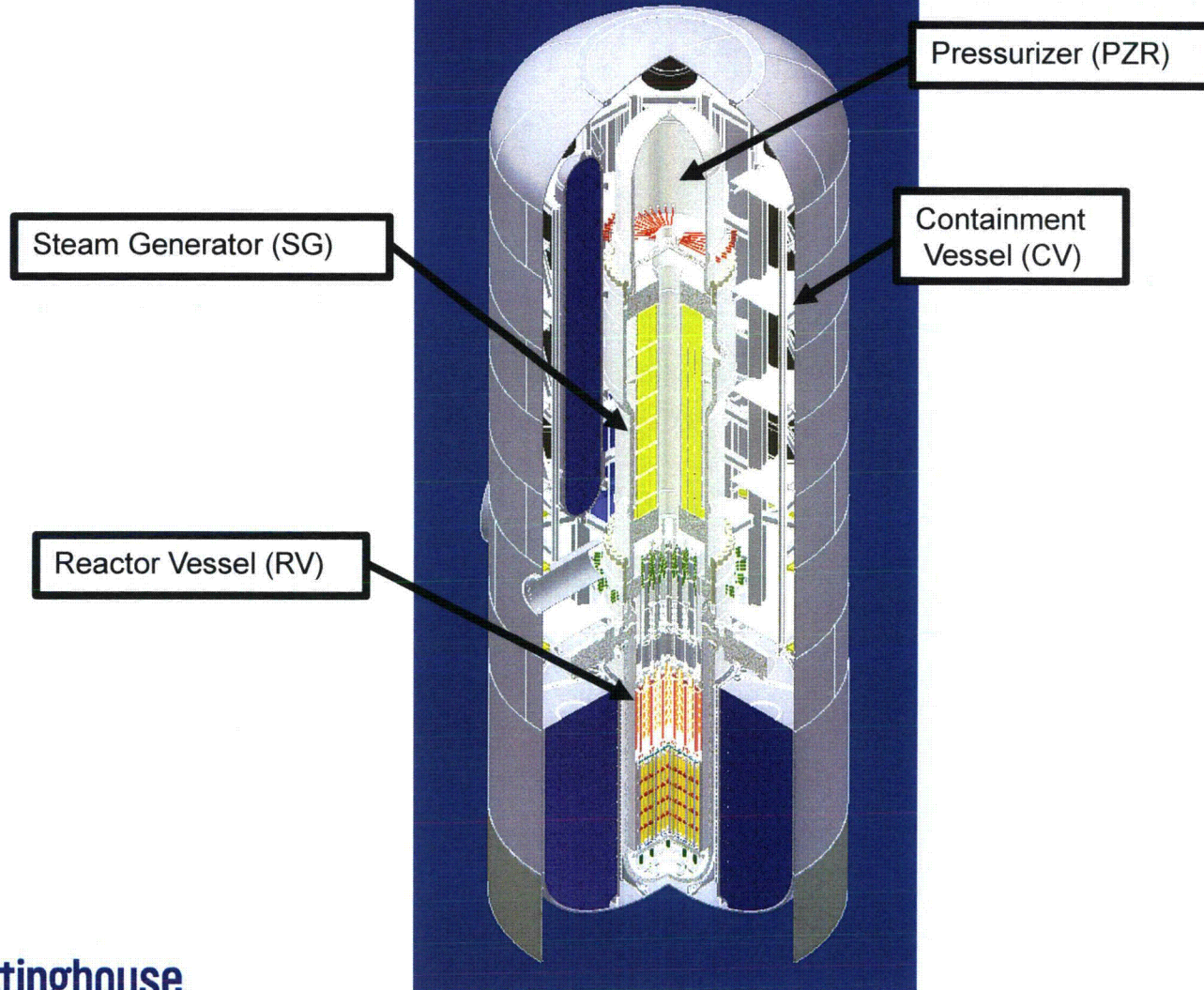


View of Nuclear Island and Turbine Building (Security-Related Information - Withhold Under 10CFR2.390)

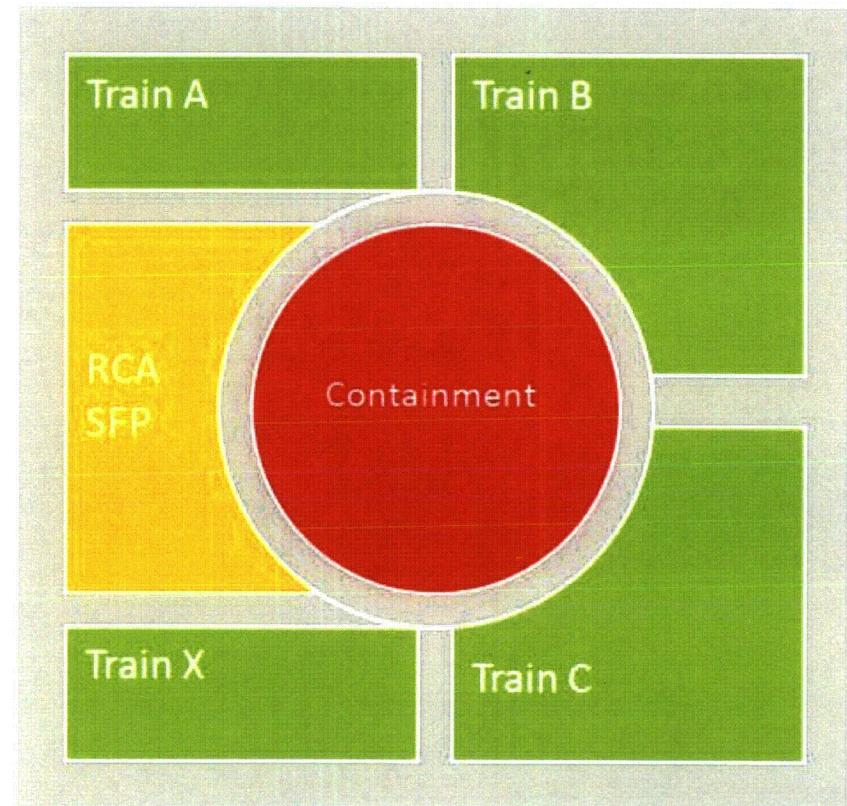
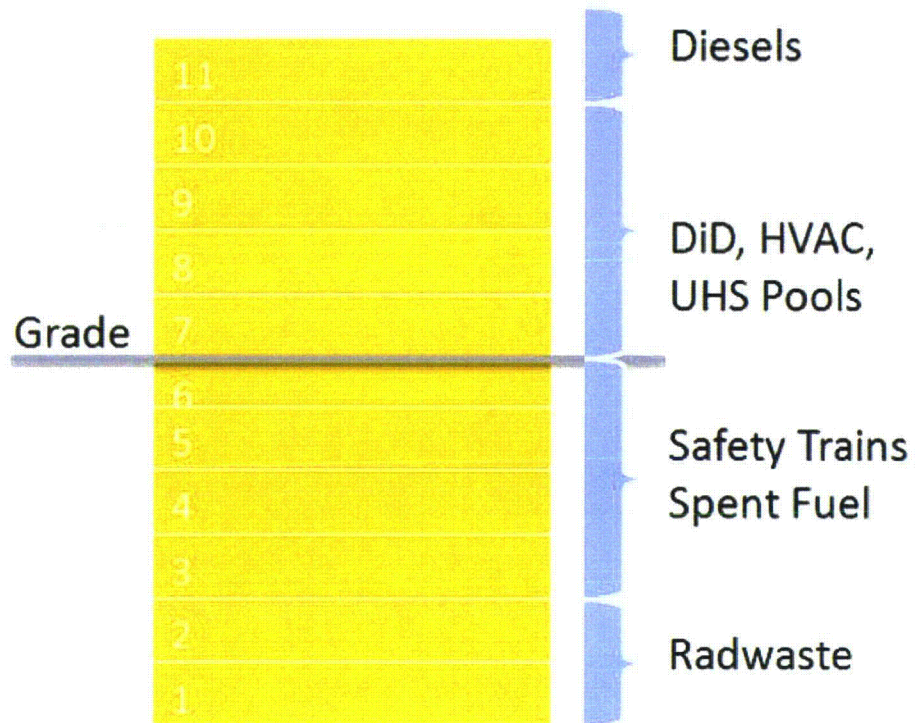
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View of Containment Vessel and Internals



Safety Zones



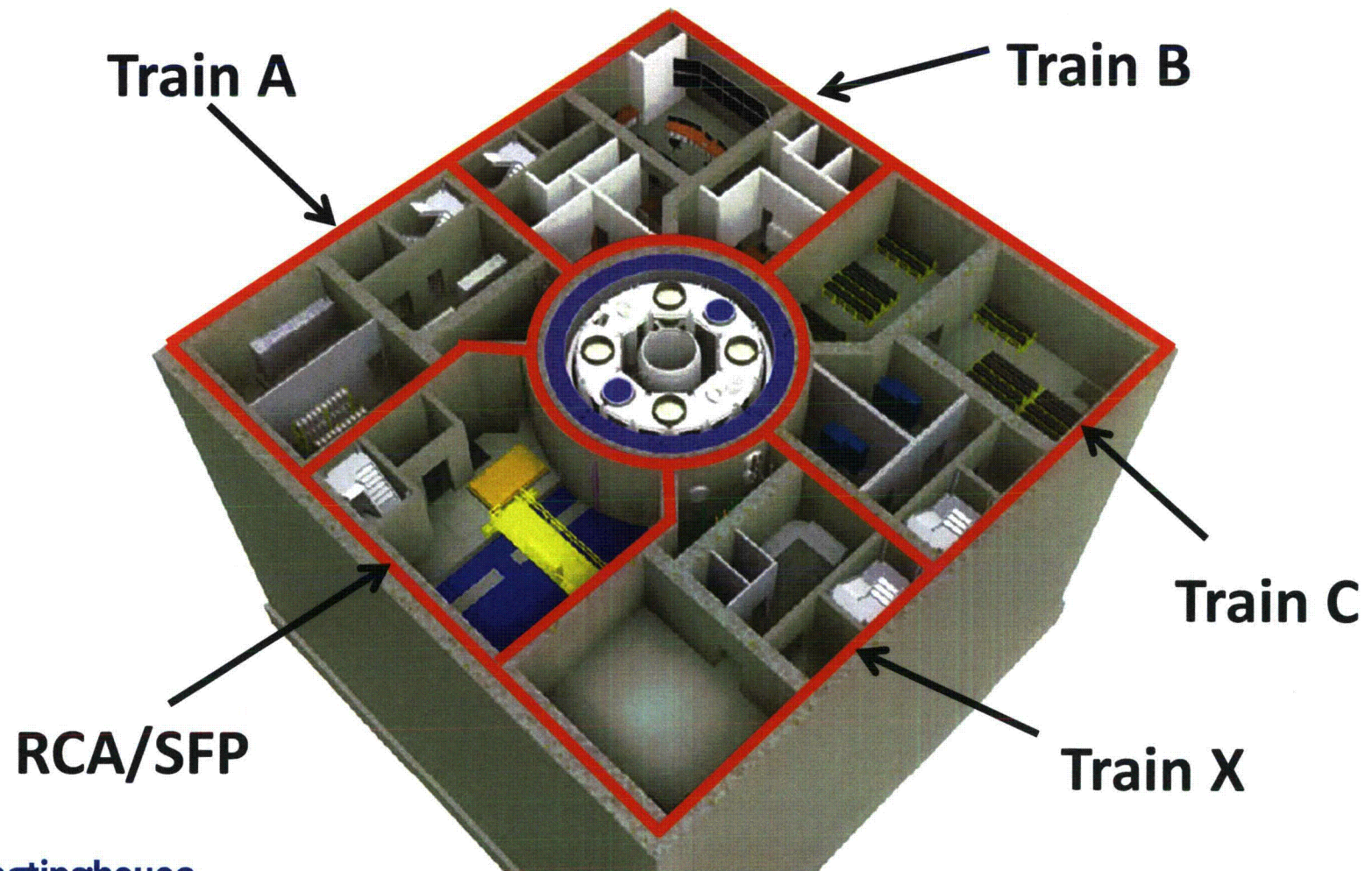
Nuclear Island Building Configuration

(Security-Related Information - Withhold Under 10CFR2.390)

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Safety Zones



Level 1: Radiological Controlled Area

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Level 2: Radiological Controlled Area

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Level 3: Safety Train IDS and Spent Fuel

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Level 4: Safety Trains and Spent Fuel Pool

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Level 5: Safety Trains and Refuel Area

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Level 6: Safety Trains - Electrical Supply

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Level 7: Grade – HVAC, CCS, Steam Line Eq.

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Level 8: RCA and Non RCA Access, VAS Exhaust (Security-Related Information - Withhold Under 10CFR2.390)

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Level 9: UHS Pools, VFS Exhaust, and CAS Eq.

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Level 10: Nuclear Island – VAS AHU, MV breakers

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Level 11: Nuclear Island – Diesels

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Level 12: Roof

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Access Corridor

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SMR Piping – Licensing Plan

Significant piping difference from the **AP1000[®]** plant

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Piping failure analysis method

Systems essential to shutdown are protected from pipe ruptures by applying the following methods:

- Postulated piping failures
- Pipe Rupture Hazard Analysis (PRHA)

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Leak Before break (LBB)

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In-containment Leak Detection



Leak Before break (LBB) (cont.)

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Leak Before break (LBB) (cont.)

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Leak Before break (LBB) (cont.)

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Break Exclusion Zone (BEZ)

SMR BEZ is on NI high energy piping outside containment

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Lines considered for BEZ

- Meet stress, inspection, anchor and weld requirements
- Evaluated for up to 1.0 square foot break for pressurization loads
- Effects of flooding, spray wetting, and subcompartment pressurization
- Through-wall cracks are not postulated

Break Exclusion Zone (BEZ) (Cont.)

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Break Exclusion Zone (BEZ) (Cont.)

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Steam Generator System (SGS) add'l detail

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CVS Purification Outside Containment

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Maintenance Floor Penetration

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Shield Wall Pipe Penetration

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Instrument Penetration

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Instrument Penetration

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Piping Analysis

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The methods and criteria used in the design and analysis of the ASME Code Classes 1, 2, and 3 piping are itemized in SMR DCD Table 3.9-19.

All SRP acceptance criteria are met.



Closing points

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SMR system piping design will be confirmed and validated via ITAAC and not by DAC

Questions?