

**Enclosure 5**  
**Levy Emergent Issues Update 02-17-15 (Non-Proprietary)**  
**(12 pages including cover page)**



- *MCR Operator Dose*
- *MCR Heat Load*
- *H2 Vent in Containment*

LEVY  
Emergent Issues Update  
02-17-15

# AGENDA

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## Open Session

- MCR Operator Dose
  - Basis and scope of change and COLA impact
- MCR Heat Load
  - Review of issues, scope of change and COLA impact
- H2 Vent in Containment
  - Revision to ITAAC, reason for change (not ISG-11) and COLA impact

## Closed Session

- Overview of Westinghouse supporting calculations

# MCR Operator Dose

## - Background

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- DCD presents a licensing basis summary of calculations for operator doses considering post-accident conditions.
- Post LOCA conditions shown in Tier 2 (Table 15.6.5-3)
- Operator doses for other accidents also presented in Tier 2 (Section 6.4)
  - ✓ Large Break LOCA
  - ✓ Steam Line Break
  - Fuel Handling Accident
  - S/G Tube Rupture
  - Rod Ejection Accident
  - Locked Rotor Accident
  - Small Line Break Outside Containment

# MCR Operator Dose

## - Basis for Change

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- Radiation dose from VES filters not considered
- Shielding credited that is not in AP1000 design
- MCR volume correction to reflect current MCR layout
- VBS radiation monitor setpoints require change
  - Certain scenarios below setpoint but can result in exceeding allowed operator dose
- Main Steam Line Break not based on most conservative assumptions
  - Certified design analysis based on mass in S/G
  - Limiting dose should be tied to activity release rate prior to isolation

# MCR Operator Dose

## - Scope of Change

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- Addition of shield plate below VES filters
- Change setpoints used to actuate VBS supplemental filtration mode and VES
  - Revised setpoints based on limiting operator dose regardless of release or accident scenario
- Reduce allowed Secondary Iodine Activity during operation

# MCR Operator Dose - Levy COLA Impacts

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## ITAAC

- Section 2.7.1, Nuclear Island Non-Radioactive Ventilation System

## Technical Specifications

- Bases 3.3.2, Engineered Safety Feature Actuation System (EFSAS) Instrumentation
- Bases 3.4.10, RCS Specific Activity
- Bases 3.7.4 Secondary Specific Activity
- Bases 3.7.6, Main Control Room Emergency Habitability System (VES)
- LCO 3.7.4, Secondary Specific Activity
- SR 3.7.4.1, Secondary Specific Activity

## FSAR

- Ch 1 – Introduction & General Description
- Ch 3 – Design of Structures, Components, Equipment & Systems
- Ch 6 – Engineered Safety Features
- Ch 9 – Auxiliary Systems
- Ch 11 – Radioactive Waste Management
- Ch 12 – Radiation Protection
- Ch 14 – Initial Test Program
- Ch 15 – Accident Analysis
- Ch 16 – Technical Specifications

# MCR Heat Load

## - Background

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- MCR bulk air temperature must remain below 95F dry bulb for 72 hour accident duration
  - Achieved by VES operation (safety-related equipment)
- MCR bulk air temperature must remain below 115F dry bulb during post 72 hour operation
  - Achieved by non-safety ventilation system (VBS)
  - Additional post-7 day operation, offsite support available through safety-related connections

# MCR Heat Load

## - Basis for Change

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- Event with emergency ventilation system (VES) actuation and offsite power available is most limiting
  - DCD assumes loss of offsite power as limiting
- MCR heat loads exceed limit to maintain MCR temperature acceptable during 72 hour time period
- MCR envelope insulation not included in design and is not practical to install
- MCR licensing basis design does not meet requirements for EQ and human factors engineering
- Non safety MCR heat loads will have automatic load shed at VES actuation
  - All plant indications and controls, both safety and non-safety, remain available to the operators following automatic load shed

# MCR Heat Load

## - Levy COLA Impacts

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### Technical Specifications

- 3.3.2 - Engineered Safety Feature Actuation System (EFSAS) Instrumentation
- Main Control Room Emergency Habitability System (VES)

### FSAR

- Ch 3 – Design of Structures, Components, Equipment & Systems
- Ch 6 – Engineered Safety Features
- Ch 7 – Instrumentation and Controls
- Ch 9 - Auxiliary Systems
- Ch 14 - Initial Test Program
- Ch 16 – Technical Specifications

# Hydrogen Vent in Containment

## - Basis and Scope of Change

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- ITAAC to ensure hydrogen from severe accident is vented away from containment shell
  - ITAAC is associated with a specific low probability non-safety related beyond design basis accident scenario
- ITAAC based on original AP1000 configuration
  - Cannot be met as written
- Analysis completed to demonstrate that current configuration adequately vents hydrogen from containment shell
- Levy COLA update
  - Revise ITAAC (DCD Tier 1, Table 2.3.9-3) to reflect current vent paths
  - ITAAC update not required by ISG-11

# Levy COLA Update Schedule

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- MCR Dose Partial (LOCA & MSL Break)
  - Submitted 02/06/15
- MCR Dose Final
  - Submit RAI response 3/31/15
- MCR Heat Load
  - Submit RAI response 2/26/15
- Hydrogen Vent ITAAC
  - Submit RAI response 2/26/15