Enclosure 3

Presentation Slides for the Westinghouse-NRC Technical Exchange Meeting on Topical Report WCAP 18773-P/NP, "Higher Enrichment for Westinghouse and Combustion Engineering Fuel Designs

(Non-Proprietary)

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(38 pages including this cover page)

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Higher Enrichment for Westinghouse and Combustion Engineering Fuel Designs

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High Energy Fuel (HEF) Program – Background

- Increased interest in improved fuel cycle economics, 24-month fuel cycles, and energy output beyond 62 GWD/MTU are driving the HEF Program at Westinghouse

- HEF Program goals:
  - Develop codes and methods, analysis, design, licensing and manufacturing associated with the insertion of LTAs with >5 w/o fuel rods into a U.S customer reactor core
  - Develop capability to manufacture a region quantitv of >5 w/o for a reload of a U.S. customer core (seeking higher burnup up to **[ ]**[a,c])

- Other topical reports (**ADOPT™, AXIOM®**) are expected to be NRC approved prior to the submittal of topical reports associated with HEF

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HEF Program – Topical Report Submittals

- Each topical report submittal will focus on the key methodological subject areas and discuss the impacts to the method and materials relative to HEF operation:
  - Incremental Burnup
  - ***Higher Enrichment***
  - PAD 5 Revision or Supplement
  - **FSLOCA™** EM Supplement
  - High Burnup
  - **EnCore®** Chromium Coated Cladding

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Purpose of the meeting

- Inform the NRC of higher enrichment topical for methods
- An opportunity for NRC feedback on approach and coverage
- Inform the NRC regarding planned submittal schedule – [ ]a,c

Higher Enrichment Topical

- Purpose is to provide an integrated package of changes in the approved methods, including nuclear core design, fuel performance, thermal hydraulic design, and non-LOCA and LOCA analysis, or justification for applicability of these methods to higher enrichment limit of [ ] a,c

- Many existing topical reports do not include a specific limitation on enrichment and many analytical methodologies will not be impacted by the use of higher enriched fuel

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Higher Enrichment Topical Outline

- The topical will evaluate impact on the following methods:

[a,c]

[ ]a,c

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Conclusions

a,c

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Acronyms

Acronym	Definition
DNB	Departure from Nucleate Boiling
DNBR	Departure from Nucleate Boiling Ratio
FSLOCA	FULL SPECTRUM LOCA
HEF	High Energy Fuel
IFBA	Integral Fuel Burnable Absorber
LOCA	Loss-of-Coolant Accident
M&E	Mass and Energy
NRC	Nuclear Regulatory Commission
PCI	Pellet Clad Interaction
PCT	Peak Cladding Temperature

Acronyms

Acronym	Definition
PV	Pressure Vessel
RCS	Reactor Coolant System
REA	Rod Ejection Accident
RIA	Reactivity Insertion Accident
RPPD	Radial Pellet Power Distribution
RPV	Reactor Pressure Vessel
RSAC	Reload Safety Analysis Checklist
SER	Safety Evaluation Report
SLB	Steamline Break
WCT	WCOBRA/TRAC

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& services to power a
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- Speed & Passion to Win
- Teamwork & Accountability

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