



ASME Code Development - Nonmetallics

July 2023

Changing the World's Energy Future

William E Windes



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July 26, 2023

Will Windes

ART Graphite Technical Lead
Idaho National Laboratory

ASME Code Development - Nonmetallics

Status 2023

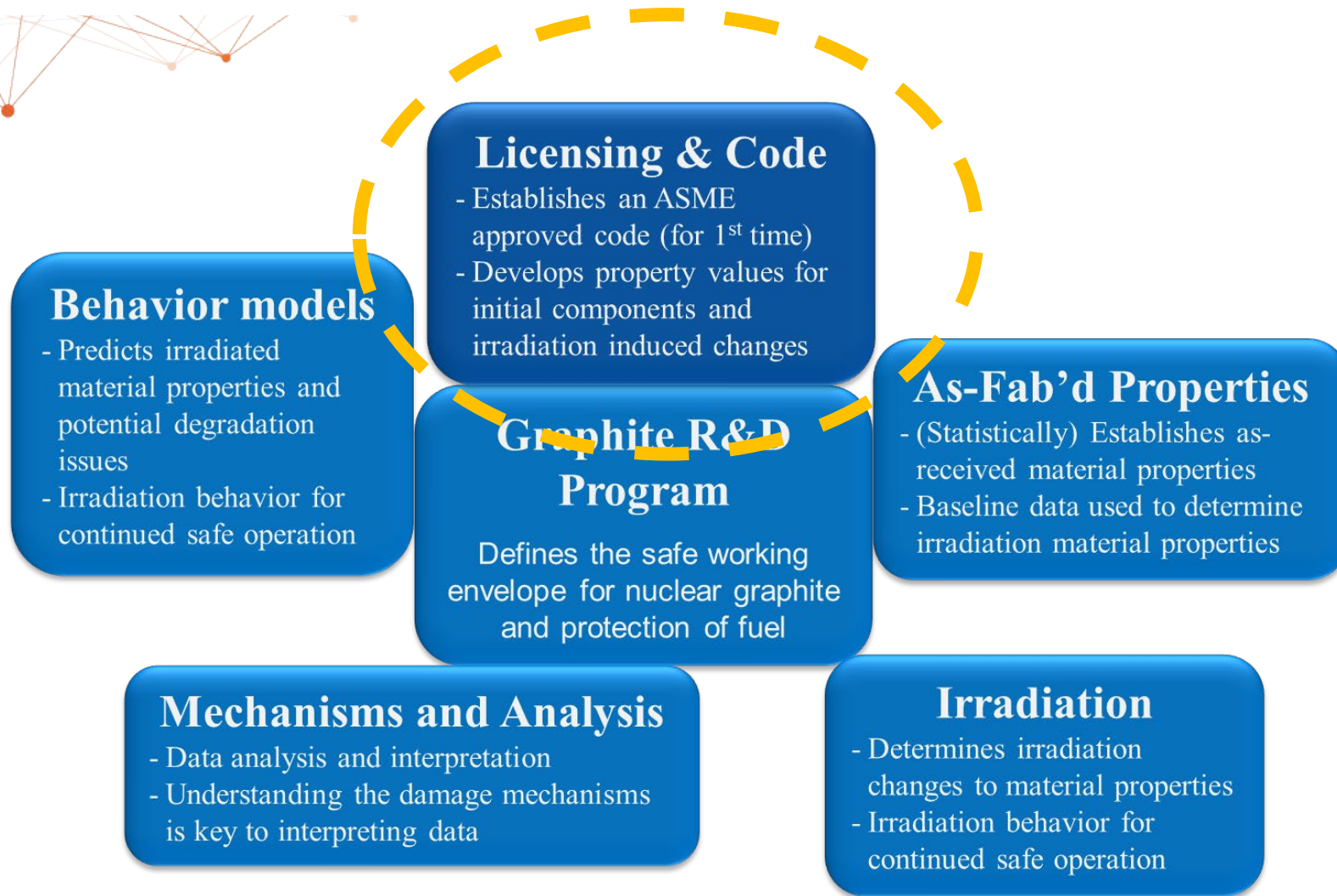
DOE ART Gas-Cooled Reactor (GCR) Review Meeting

Virtual Meeting

July 25 – 27, 2023



ASME is now one of the largest areas in program



FY22 ASME Activities

Irradiation Response

Design Rules

Molten Salt

Oxidation

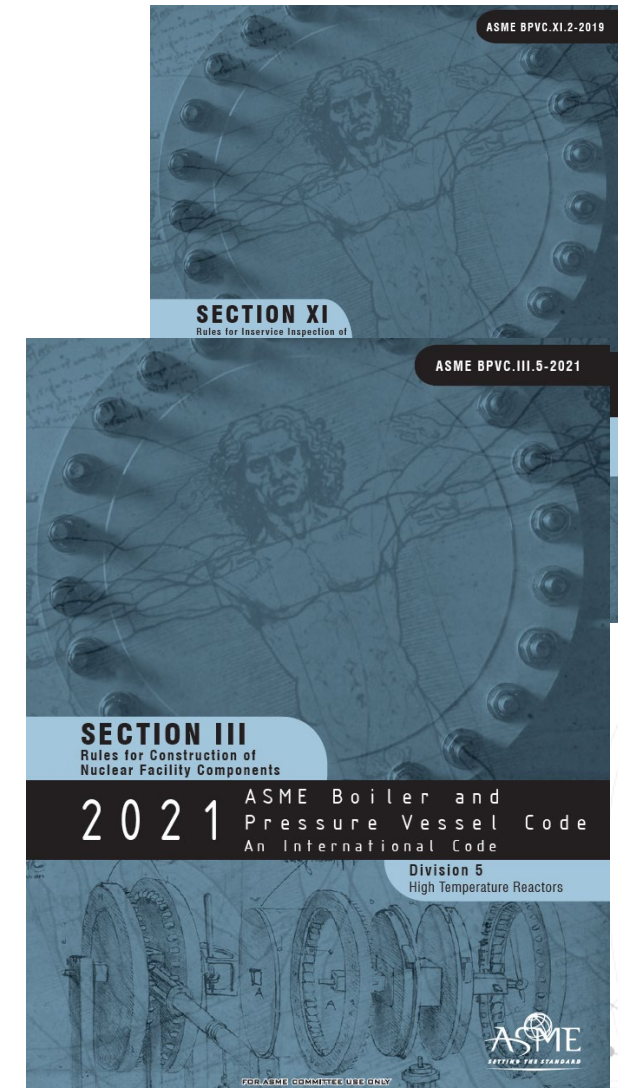
Definition of Failure

RIM

Composites

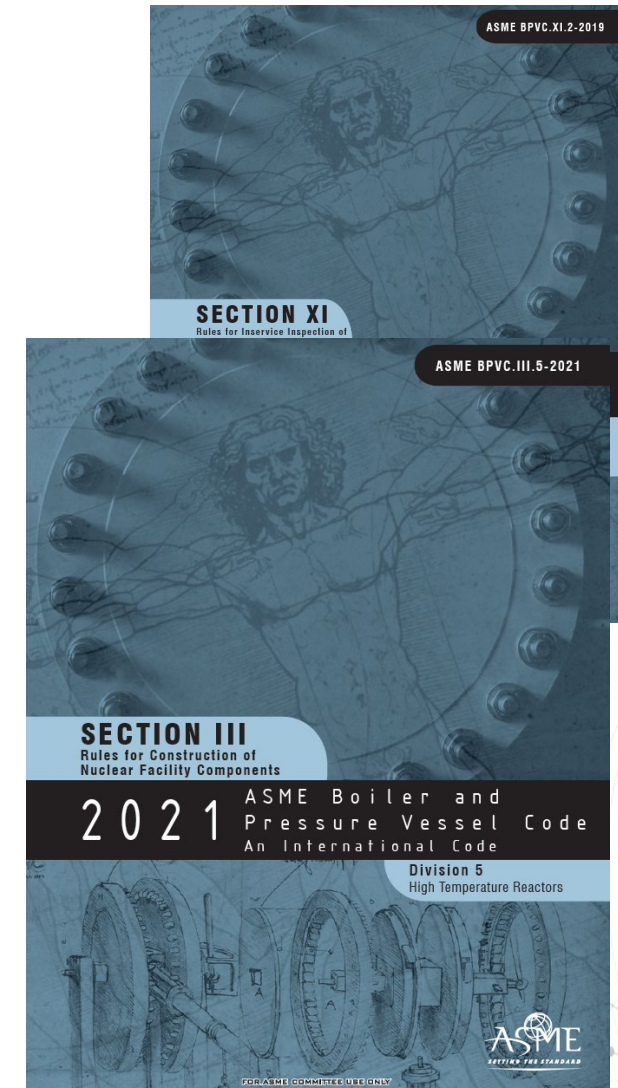
ASME Task Groups

- Task Groups within the ASME Section III, Division 5, Subsection HHA/HHB
 - Based upon identified gaps in the code
 - Main activity of Nonmetallic Working Group
- Task Groups:
 - Component Failure (Martin Metcalfe)
 - *Section III-5 (Component Failure)*
 - *Section XI-2 (Component Inspection)*
 - Ceramic Composites (Wilna Geringer)
 - Design (Andrea Mack)
 - Degradation:
 - Irradiation behavior (Will Windes)
 - Oxidation behavior (Cristian Contescu – retired)
 - Molten salt interactions (Nidia Gallego)



ASME Task Groups – discussion today

- Task Groups within the ASME Section III, Division 5, Subsection HHA/HHB
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Where do they fit in?

- Irradiation behavior (Will Windes)
 - “All graphite behaves similarly”
- Ceramic Composites (Wilna Geringer)
 - Addressing critical issues in ceramic composites code rules (HHB)
- Design (Andrea Mack)
 - Probability of Failure (POF) questions
 - Needed “right now” for initial HTR designs
 - An ASME priority for 2025 version of BPVC
- Component Failure (Martin Metcalfe)
 - What is failure in graphite?
 - Damage tolerant material

