



# **DOE-HDBK-3010-94 (R2013) REVISION UPDATE**

**EFCOG Nuclear & Facility Safety Workshop  
February 2020**

**Caroline Garzon, Project Lead  
Office of Nuclear Safety Basis & Facility Design (AU-31)**



# DOE-HDBK-3010 REVISION SCOPE



- Handbook >25 years old; 2013 reaffirmation had no changes
- Revision scope includes
  - Updating 14 sections to present new ARF/RF information from relevant experiments, studies and publications
  - Moving non-ARF/RF information in Chapter 6, Criticality to DOE-HDBK-1224-2018, *Hazard and Accident Analysis Handbook*, Appendix B, Criticality Accidents
  - Ensuring Chapter 7 is consistent with updated sections
  - Minimal changes to correct errata, delete “must/shall” statements, and update outdated DOE references
- Recommended bounding ARF/RF values will not change in other sections of chapters



# DOE-HDBK-3010 REVISION



DOE-HDBK-3010 Section/Title	Revision Scope
2.1: Non-Condensable Gases	New information on tritium and HTO
3.2.1: Boiling to Dryness	Expanded background information discussion
3.2.2.3: Venting of Pressurized Liquids	New information/methodology from 2012-2013 PNNL PSL experiments
3.2.3: Free-Fall Spill	Expanded discussion to limit spill height of Ballinger-Archimedes methodology
4.2.1.2: Uranium Fires	New information/methodology from 2015 Y-12 uranium fire experiments
3.2.2.1/ 4.2.2.1/ 4.3.2.1: Explosive Stress	New information from NUREG/CR-6410
4.3.1.3/6.3.2: Non-metallic Composite Solids, Encased Nuclear Material	New information from NUREG-1887 and NUREG/CR-6451



# DOE-HDBK-3010 REVISION



DOE-HDBK-3010 Section/Title	Revision Scope
4.4.2.3: Venting of Pressurized Powder	New information/methodology from NUREG/CR-6410
4.4.3.3.2: Free-Fall Spill and Impaction Stress	New information/methodology from 2013 Gao, Zhang and Byington technical paper
5.2.1.1: Packaged Waste	Expanded background discussion
Chapter 6: Criticality	New information from more recent criticalities; move non-ARF/RF information to DOE-HDBK-1224



# CONTRIBUTORS



Name	Organization	Section(s) of Interest
Caroline Garzon	DOE/AU-31	All 3.2.1.3 Boiling to dryness 3.2.2.1 Shock Effects
Carl Mazzola	PEC	All
Bill Weaver	SRNS	2.3 Tritium (new)
Roger Lanning	WRPS	3.2.2.3 Venting of Pressurized Liquids*
Terry Foppe	Link Technologies	3.2.2.3 Venting of Pressurized Liquids* 3.2.3.1.1 Limitations of Ballinger-Archimedes Formula 4.4.2.3 PuO <sub>2</sub> Release During Fires in 3013 Containers
John McAllister	AECOM	3.2.3.1 and 3.2.3.2 Free-Fall Spill



# CONTRIBUTORS (CONT.)



Name	Organization	Section(s) of Interest
Kevin O’Kula	AECOM	3.2.3.1 and 3.2.3.2 Free-Fall Spill
Doug Clark	CNS Y-12	4.2.1.2.1 Oxidation at Elevated Temperatures
Gavin Hawkley	INL	4.3.1.3.1 Encased Nuclear Material
Louis Restrepo	PEC	4.3.1.3.1 Encased Nuclear Material 6 Inadvertent Nuclear Criticality
David Pinkston	LLNL	4.4.3 Free-fall Spill and Impaction Stress
David Louie	SNL-ABQ	6 Inadvertent Nuclear Criticality
Jeff Woody	Link Technologies	As needed



# 3010 SENIOR REVIEW COMMITTEE



- **Senior Review Committee (SRC) Commissioned to Ensure**
  - Handbook stays current and relevant as a living document
  - Relevant emerging issues are addressed and resolved
  - Contractor community (EFCOG) is engaged in the revision process
- **SRC Membership**
  - Caroline Garzon – AU-31 Team Lead (with support from Carl Mazzola, Project Enhancement Corp)
  - Bob Nelson, EM
  - David Pinkston, LLNL
  - Louis Restrepo, Project Enhancement Corp, supporting AU-31
  - Terry Foppe, Link Technologies, supporting AU-31
  - Jeff Woody , Link Technologies, supporting AU-31



# DOE-HDBK-3010 SCHEDULE



Resolve SME/PSO comments and develop 2 <sup>nd</sup> draft	March 2020
Follow-up meeting to discuss 2 <sup>nd</sup> draft	March 2020
2 <sup>nd</sup> draft to SRC/SMEs for review and comment	May 2020
Resolve SRC/SME comments; develop 3 <sup>rd</sup> draft	June-July 2020
3 <sup>rd</sup> draft to AU-30/ PSO for pre-Rev Com review	August 2020
Resolve pre-Rev Com draft comments	September 2020
Handbook revision to Rev Com for 60-day review	October 2020





# PRIMARY AU-31 CONTACT



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