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# Status of ANSI/ANS-8.1

Presented at the ANS-8 Meeting

2009 ANS Winter Meeting  
Washington DC  
November 19, 2009

**Doug Bowen Nick Brown**  
**Co-chairs**

# Overview

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- **Working group composition**
- **Timeline of events since late 2005**
- **Clarification timeline**
- **Revision Details**
  - Clarifications/enhancements
  - New subcritical limits
- **Conclusions**

# Working Group Composition

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- **There are 22 volunteers on the working group**
  - 16 organizations represented

<b>Sandia National Laboratory</b>	<b>Los Alamos National Laboratory</b>	<b>Nuclear Fuel Services</b>	<b>Y12 National Security Complex</b>
<b>Oak Ridge National Laboratory</b>	<b>DOE-Idaho DOE-Albuq.</b>	<b>Argonne National Laboratory</b>	<b>Savannah River Site</b>
<b>Paducah Gaseous Diffusion Plant</b>	<b>Lawrence Livermore National Laboratory</b>	<b>Idaho National Laboratory</b>	<b>British Nuclear Fuels</b>
<b>Global Nuclear Fuels</b>	<b>Paschal Solutions</b>	<b>Nuclear Regulatory Commission</b>	<b>CE Engineering</b>

# Timeline Since 2005

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- **Reaffirmation of ANSI/ANS-8.1-1998**
  - Completed – September 2007
- **Project Initiation Notification (PINS) Form Initiated to revise the Standard**
  - Approved by ANSI – April 2008
- **Clarification for Mr. Calvin Hopper's inquiry**
  - Completed – October 2009
- **Working Group Meetings**
  - Atlanta – 2 closed door working group meetings
    - Clarification and revision
  - Washington DC – 2 closed-door working group meetings
    - Revision

# Clarification Timeline

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- **10/22/07 – Calvin Hopper’s request for clarification submitted to ANS**
- **05/12/08 – N16 evaluation completed and submitted to ANS**
- **06/17/08 – ANS provides the request to ANS-8.1 working group for clarification**
- **07/21/08 – Draft clarification generated by the working group**
  - Draft clarification retracted to allow for a more concise response
  - Current working group members were asked to provide responses to the Mr. Hopper’s questions
    - Webpage was constructed to make historical and other reference material available to the working group
  - Consensus input from the ANS-8.1-1998 working group was requested
- **10/24/08 – Official request made to the ANS-8.1-1998 working group chair for clarification input**

# Clarification Timeline, Continued

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- **01/20/09 – ANS-8.1-1998 working group provides consensus input**
- **02/03/09 – Clarification draft issued and sent to ANS-8 for ballot**
- **06/18/09 – The last of the ANS-8 comments received**
- **09/04/09 – Comment responses submitted to ANS-8**
  - ANS-8 submitted the clarification response to N16 for ballot shortly thereafter
- **10/06/09 – N16 comments provided for resolution**
- **10/20/09 – N16 comments resolved**
  - Final clarification response drafted (editorial changes made)
- **10/28/09 – Clarification response issued by Standards Board Chair**

# Revision Details

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## ■ Clarification/enhancements

- Step 4.1.2 “Process Analysis”
- Step 4.2.2 “Double Contingency Principle”
- Other issues as identified via:
  - Reaffirmation comments
  - PINS comments
  - Input from ANS-8, N16, and others

## ■ Subcritical Limits

- Uranium compounds at enrichments < 10 wt. % U-235
  - Requested to support higher enrichments desired by enrichment and fuel fabrication facilities
- Moisture content of Pu/U oxides?

# Conclusions

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- **Diverse and active working group**
- **18 months into the current revision**
- **Will clarify and enhance the relationship and meaning of Sections 4.1.2 & 4.2.2 in the current revision**
- **New subcritical limits will be added to the current revision**