

**NMMSS Users Annual Training Meeting
Atlanta, Georgia—May 22-24, 2007**

**American National Standard Institute
ANSI - N15.8
Regulatory Guide 5.29**

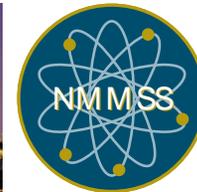
**Special Nuclear Material Control &
Accounting Systems for Nuclear Power
Plants**

Presenter

Giancarlo Delfini

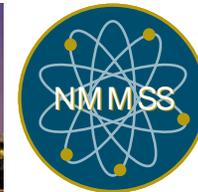
History of ANSI N15.8-1974

- Original ANSI standard written in 1974
- Endorsed by NRC in 1975 with Regulation Guide 5.29
- “The guidelines set forth in ANSI N15.8-1974, "Nuclear Material Control Systems for Nuclear Power Plants," are generally acceptable to the NRC staff and provide an adequate basis for systems for the control and accounting for special nuclear material at a nuclear power plant.



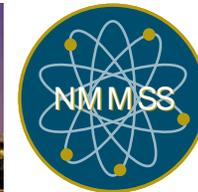
History of ANSI N15.8-1974

- ANSI N15 Standards remain active for 10 years
- After 10 year life ANSI 15 standards are required to be re-affirmed within 5 years
- Never done
- ANSI N15.8 became inactive
- 1/15/1998 Reg Guide 5.29 was withdrawn



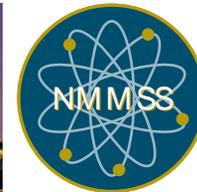
History of ANSI N15.8-1974

- The lack of Nu Reg and ANSI Standard left the Nuclear Power Plant industry with only the CFR for regulatory compliance
- CFR have little guidance
 - Written procedures “Sufficient to enable the licensee to account for the SNM in its possession”
 - Physical Inventory
 - When is physical verification required (ALARA)



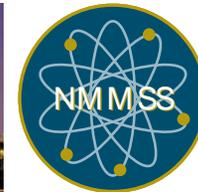
Industry Events

- In 2001 a facility lost two fuel rods -
Everyone knows the details by now...
- Then some other facilities misplaced rods...
- Bulletin 2005-01
- NRC Temporary Instruction 2515/154
- MC&A Inspections Currently being
performed on all licensees



ANSI Writing Committee

- Brainstorming session was formed at the 2005 NMMSS Conference
- This led to the ANSI N15.8 writing committee to create new ANSI standard for the industry
- March 2006 first meeting of writing committee
- Three writing committee meetings and one NEI Workshop later...
- ANSI N15.8 Special Nuclear Material Control & Accounting Systems for Nuclear Power Plants



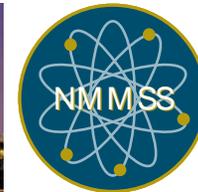
Re-Written ANSI N15.8 Standard

- Remember this is a standard
- Will not create your SNM program
- It is trying to include many variations the industry has developed but were all adequate control of SNM



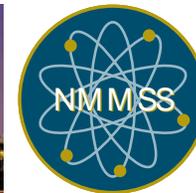
Re-Written ANSI N15.8 Standard

- Included reference CFR sections with footnotes
- Establishment of ICA's
- Establishment of Organizational Requirements
- Establishment of Procedures for MC&A program
- Credit for Corrective Action Program



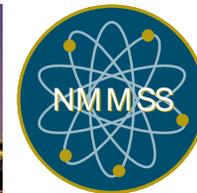
Highlights of the Re-Written ANSI N15.8 Standard

- In **Definitions** section:
- **fuel component container.** A container that provides protection comparable to that afforded by an intact fuel assembly and that is held to the same accounting standards as a fuel assembly, in that the container has the following attributes:
 - The container is specifically designed to contain rods/rod fragments
 - The container is stored in the fuel storage rack cells
 - The use of specialized handling tools and equipment is required to access the SNM stored in the container.
- Under **Physical Inventory**
- **7.3.1 Assemblies and Fuel Component Containers.** For fuel assemblies and fuel component containers in the spent fuel pool, an item count is sufficient. If the contents of an assembly or a fuel component container are accessed, the contents shall be physically re-inventoried before it can be treated as a single item for inventory purposes.



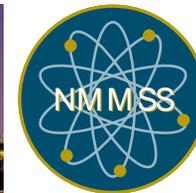
Highlights of the Re-Written ANSI N15.8 Standard

- **Under Internal Control**
- **6.6 Damaged Cladding.** Severe damage to cladding, where rod structural integrity has not been maintained, has the potential to result in inadvertent physical separation and dispersal of fuel components from the fuel rod. Upon visual identification of inadvertent physical separation, an estimate of the SNM quantity and the origin of the SNM should be made, documented, and reported, if required.



Highlights of the Re-Written ANSI N15.8 Standard

- Under **Physical Inventory**
- **7.3.5 Non-fuel SNM.** For non-fuel SNM, the method of physical inventory depends on the method of storage and use:
 - For installed components, an item count shall be taken at the time the item is installed and administrative procedures shall be established so that records concerning the location and unique identity are accurate.
 - For irradiated components that are stored in a non-fuel SNM container which precludes ready access to the non-fuel SNM stored within, an item count of the non-fuel SNM container is sufficient.
 - Where verification is not practical (for reasons such as ALARA), an item count shall be taken at the time the item is placed into a designated storage area and administrative procedures shall be established so that records concerning the location and unique identity are accurate.



Highlights of the Re-Written ANSI N15.8 Standard

- Questions?

