

REVIEW OF BREAKDOWN OF AGREEMENT STATE AND NRC EVENT DATA

Staff performed a special study of the data to determine if there were any significant differences between the event data reported regarding Agreement State licensees as compared to that reported regarding NRC licensees. The information was reviewed based on Operational Plan performance data, Abnormal Occurrence (AO) data, and data in the Nuclear Material Events Database (NMED).

In comparing the data, the assumption was made that the distribution of licensee types and uses was the same between the Agreement States and NRC. This was considered a valid assumption given the data in each category included multiple States, and that the States were fairly uniformly distributed across the U.S. As a result, the composition of Agreement States licensee population and the NRC licensee population would be very much the same, and differ only in magnitude (number of licensees).

Frequency of Events:

Based on the 2006-2007 Information Digest (NUREG-1350), there are approximately 22,132 licensees, with approximately 17,604 Agreement State licensees and 4,528 NRC licensees, which translates to approximately 80% Agreement State and 20% NRC. Over the years, the percentage of Agreement State licensees has increased as the number of Agreement States increased. Based on the 1998-1999 Information Digest, the percentage was approximately 75% Agreement State and 25% NRC (20,778 total: 15,512 Agreement State, 5,266 NRC).

Based on the FY 2006 Operational Plan, of the total events reported that met the Operational Plan Measures for events, there were 22 events involving overexposures to individuals. Of these, 19 (86%) were Agreement States and 3 (14%) were NRC. There were 31 events involving medical events. Of these, 19 (61%) were Agreement State and 12 (39%) were NRC. There was one event involving release of material. This was an Agreement State event. There were 171 events involving lost or stolen material. Of these, 136 (80%) were Agreement State and 35 (20%) were NRC.

Based on the FY 2006 Abnormal Occurrence (AO) Report, there were 9 AO events reported in FY 2006. Of these, 6 (67%) were Agreement State and 3 (33%) were NRC. Based on AO Report data over the past 8 years (FY 1999 through FY 2006), there were a total of 81 AOs reported. Of these, 57 (70%) were Agreement State and 24 (30%) were NRC. For both Agreement States and NRC, the predominant AO event type was medical (84% of total Agreement State events and 72% of total NRC events).

Based on the Fourth FY 2006 NMED Quarterly Report, there were 452 total reportable events for FY 2006. Of these, 335 (74%) were Agreement State and 117 (26%) were NRC.

Although these are very small numbers making statistical calculations imprecise, the percentages are consistent with the total number of Agreement State versus NRC licensees as reported in the latest NRC Information Digest, and do not suggest any significant difference

between the Agreement States and the NRC. In a very close look at the numbers, it may appear that the percentages for Agreement States are slightly lower than expected (with a converse that the NRC are slightly higher), however, given the relatively small shift, it is not considered to be a significant difference. Some examples of the points of uncertainty in the data are:

- The difficulty in making statistical determinations based on small numbers; and
- The margin for error in the count of numbers of licensees as reported in the Information Digest. One area in particular is the method for counting the four NRC Master Material Licensees (MMLs). The number reported in the Information Digest reflect each MML as one license, however each MML covers a large number of permittees (which could arguably be counted as individual licensees for statistical purposes). The number of permittees is in excess of 500. If these were counted as individual licensees for FY 2006, then NRC would constitute 22% of the total licensees. Using a number of 1000 permittees would raise the NRC percentage to 24%.

Types of Events:

Based on an evaluation of the last 4 years of data in the NMED, the event types can be divided into three tiers with respect to percentage of occurrence.

- The top tier consists of events involving lost and stolen material, and events involving equipment problems. Out of the eight event types as defined in NMED, the most common event type for both Agreement States and NRC is lost and stolen material. The second most common event type for both Agreement States and NRC is equipment related events. This tier comprises approximately 72% of events (77% of the total Agreement State events and 62% of the total NRC events);
- The middle tier consists of events involving medical, leaking sources, and transportation. This tier comprises approximately 21% of events (17% of the total Agreement State events and 30% of the total NRC events);
- The lowest tier consists of events involving overexposures, releases of material, and other. This tier comprises approximately 7% of events (6% of the Agreement State events and 8% of the NRC events).

Although there is some variance in the percentages for each event type and the number of events are very small making statistical calculations imprecise, it appears that the types of events reported and the percentage of each event type as compared to total events are relatively the same between the Agreement States and the NRC.

Summary:

There were no significant differences identified after comparison of the Agreement State and NRC data. There was no indication of significant difference in the frequency of event occurrence. The magnitude of Agreement State and NRC events was low considering the number of Agreement State and NRC licensees, and was consistent with the number of events reported for previous years.