

## ANNUAL TREND IN ABNORMAL OCCURRENCE EVENTS FROM FISCAL YEAR 2001-2010

Table 1 shows the number of events reported annually that were determined to meet the Abnormal Occurrence (AO) criteria. A total of 105 events were found to meet the AO criteria for the period fiscal year (FY) 2001-2010. Of these 105 events, 39 of the events were by U.S. Nuclear Regulatory Commission (NRC) licensees and 66 of the events were by Agreement State (AS) licensees. It should be noted that the number of Agreement State AOs is lower than expected when compared to the number of NRC AOs considering the Agreement States have 87 percent of the materials licensees. After an analysis of the NRC and Agreement State AO data separately, the data indicated that there was a statistically significant increase in the number of NRC AOs. The staff has not identified the cause of this increasing trend at this time but, will continue to analyze the data and report our findings in a future report.

Approximately 87 percent of the AO events for the last 10 years were medical events. However, the relative higher number of medical events determined to be AOs is not necessarily an indication of relative performance between the medical industry and other industries. One reason why medical events make up a large fraction of AOs is that medical therapy procedures use large sources of radiation in very close proximity to or within the body. Due to the close proximity of the sources, small errors in source location can cause high radiation doses to unintended locations, resulting in unintended doses that exceed the AO criteria. There is no discernable trend in the total number of AO events when data from FY 2001 through 2010 are analyzed.

It is noteworthy that although events involving the loss or theft of material account for about 45 to 50 percent of the number of events reported to NRC each year, there were no loss/stolen source events in the last 10 years that met the AO criteria.

**Table 1 - Comparison of the Annual Number of Abnormal Occurrence Events**

Year	Radiation Levels Exceed Limit		Medical		Personnel Overexposure		Fuel Cycle Facility		Totals	
	NRC	AS	NRC	AS	NRC	AS	NRC	AS	NRC	AS
2001	0	0	0	0	1	1	0	0	1	1
2002	0	1	1	3	1	3	0	0	2	7
2003	0	0	5*	7	0	2	0	0	5	9
2004	0	0	2	12*	0	1	2	0	4	13
2005	0	0	3	6*	0	0	0	0	3	6
2006	0	0	2*	5*	0	1	1	0	3	6
2007	0	0	5*	6	0	0	0	0	5	6
2008	0	0	5*	5*	0	0	0	0	5	5

Year	Radiation Levels Exceed Limit		Medical		Personnel Overexposure		Fuel Cycle Facility		Totals	
	NRC	AS	NRC	AS	NRC	AS	NRC	AS	NRC	AS
2009	0	0	3	6*	0	0	0	0	3	6
2010	0	0	8*	7*	0	0	0	0	8	7
<b>Totals</b>	<b>0</b>	<b>1</b>	<b>34</b>	<b>57</b>	<b>2</b>	<b>8</b>	<b>3</b>	<b>0</b>	<b>39</b>	<b>66</b>

\*Include events involving a dose to embryo/fetus.