



Identifying Training Issues at DOE Sites

10 CFR 851 Workshop

October 28, 2009





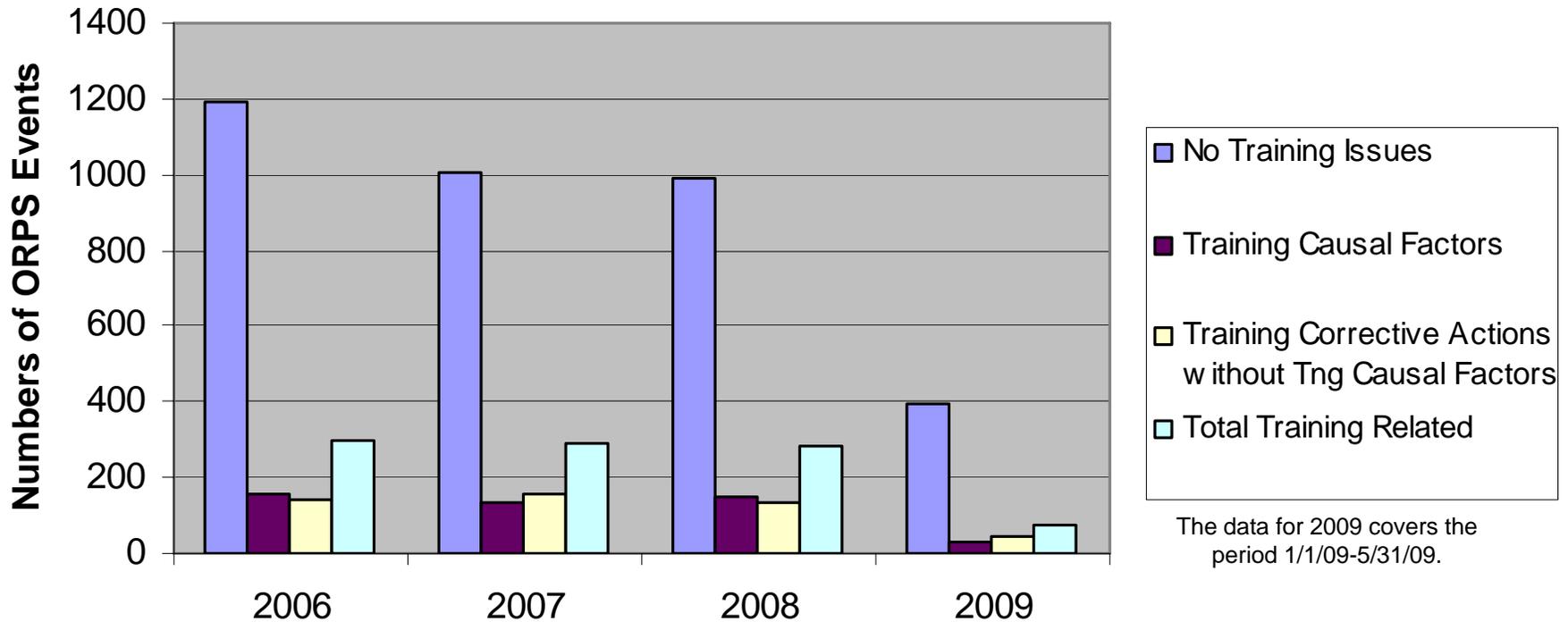
Overview



- This analysis was conducted because of interest in the role training (or the lack thereof) plays in abnormal events at DOE sites
- This assessment uses the reports in DOE's Occurrence Reporting and Processing System (ORPS) *where training was cited as a cause for an event* (there are often multiple causes)
 - ORPS is very comprehensive in capturing abnormal events across the DOE Complex
 - Not all ORPS reports require a cause code
- This briefing is a condensed version of the overall assessment



Training-Related ORPS Events as a Subset of all Occurrences by Year from 1/1/2006 to 5/31/2009

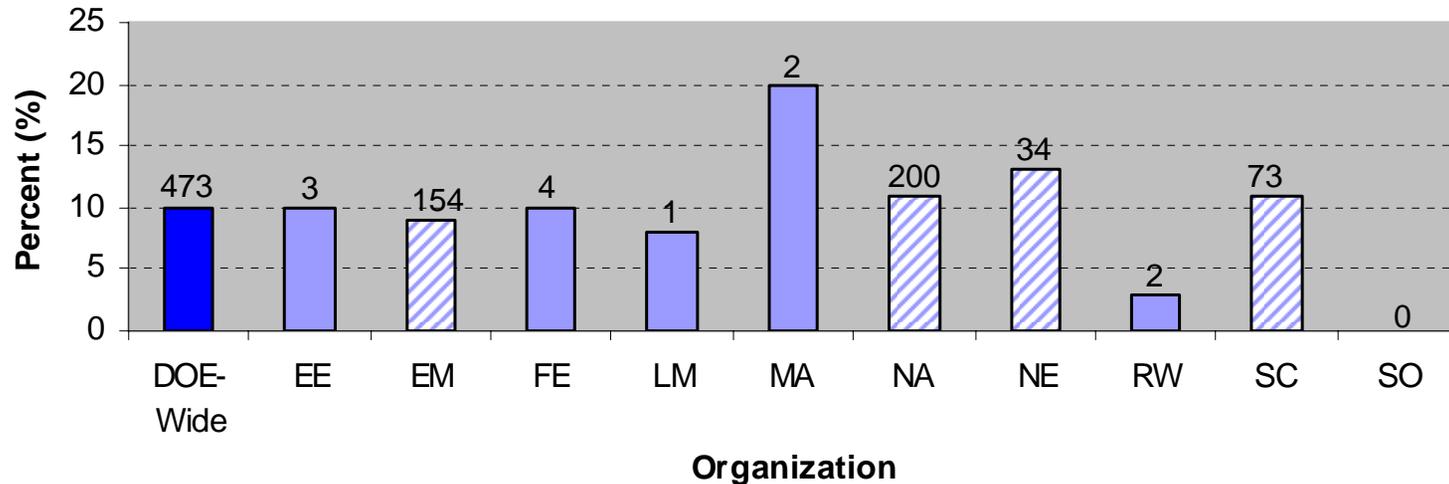


About 10% of all ORPS events have a training-related cause.

Not all ORPS reports list causes—just over 15% of those with at least one cause cited a training-related cause.



Percent of ORPS Events with a Training Cause Code Identified



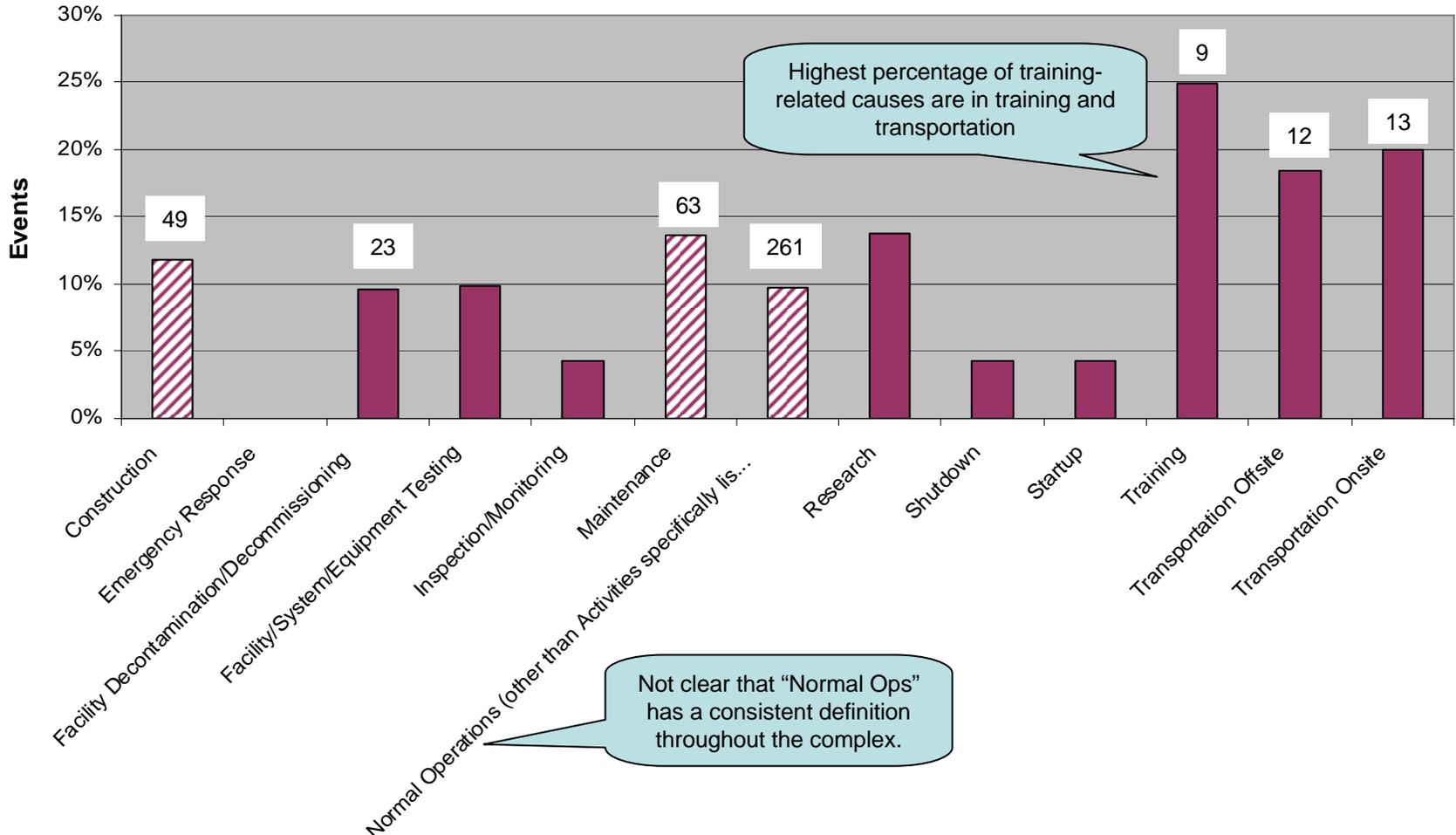
The ratio of reports with training causes to total reports is relatively constant throughout the DOE complex

This graph displays all of the ORPS events with an identified training-related cause for the period, 1/1/2006–5/31/2009. Numbers above each bar are the actual number of ORPS events with a training related cause.

Multiple causes are generally reported in ORPS; i.e., training is not the only causal factor that was identified in these cases.



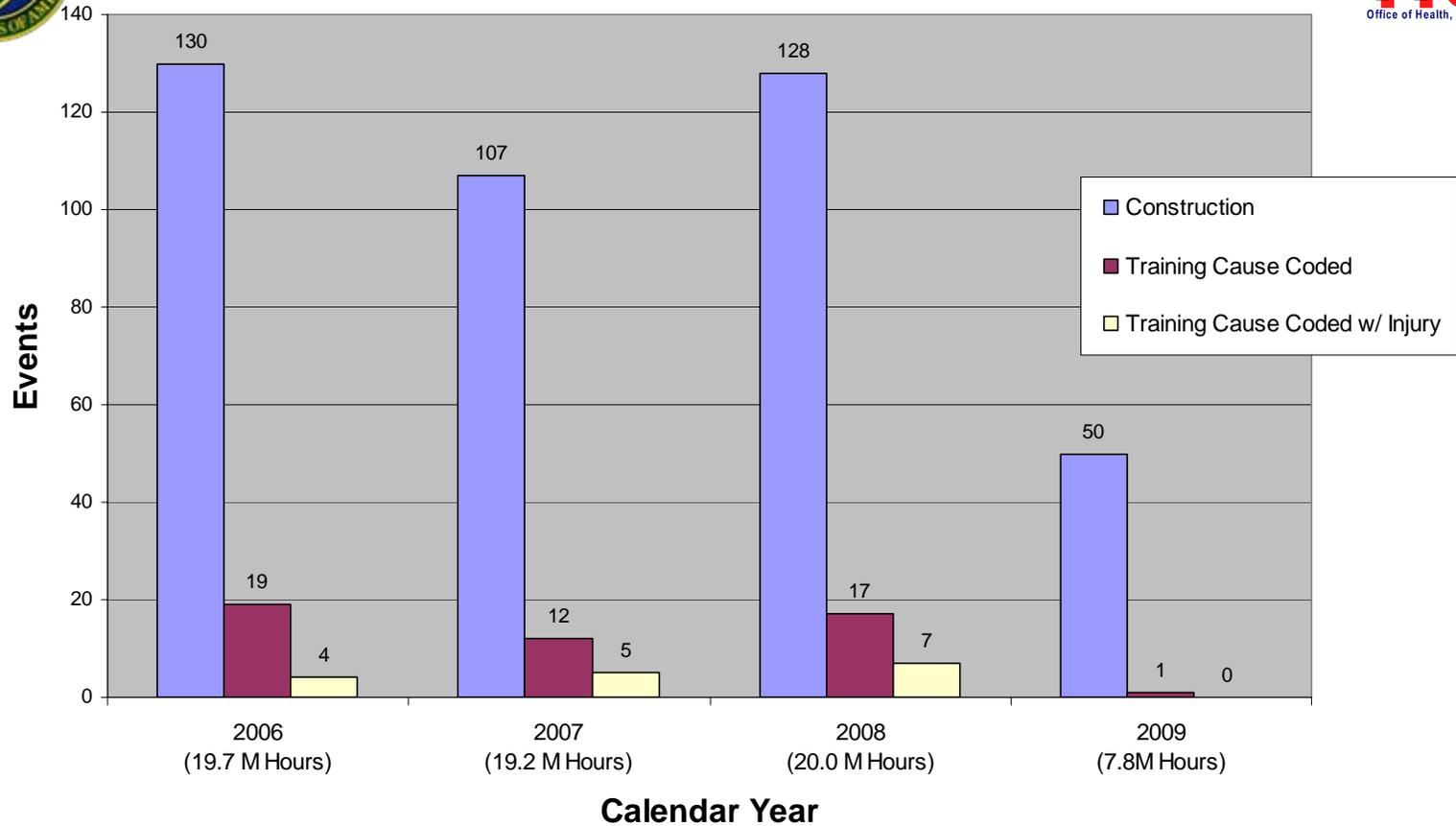
Percent of Each Activity Event with Training Cause Coded Between 1/1/2006 and 5/31/2009



Most training-related events are during construction, maintenance, and normal ops, but they happen at normal rates



Construction Activity Event Counts Between 1/1/2006 and 5/31/2009

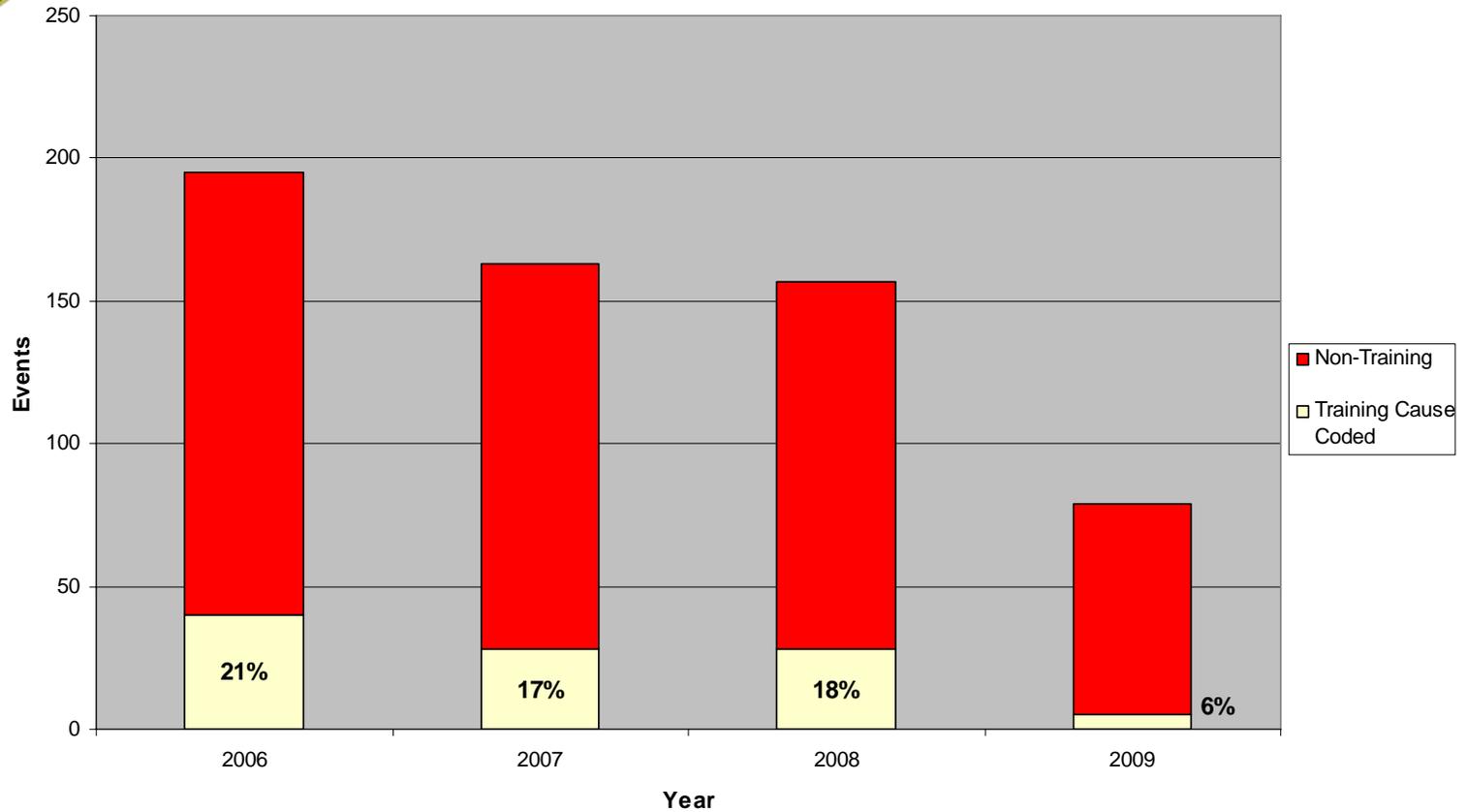


11.8% of construction ORPS events have a training cause listed.

3.9% have a training cause listed and an injury associated with the event (less than 10 per year).



ORPS Events Resulting in Injury Between 1/1/2006 and 5/31/2009



Overall less than 20% of injury reports have a training-related cause listed.

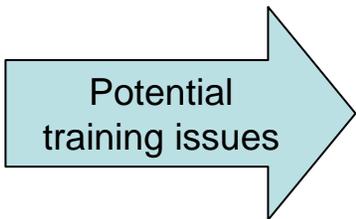
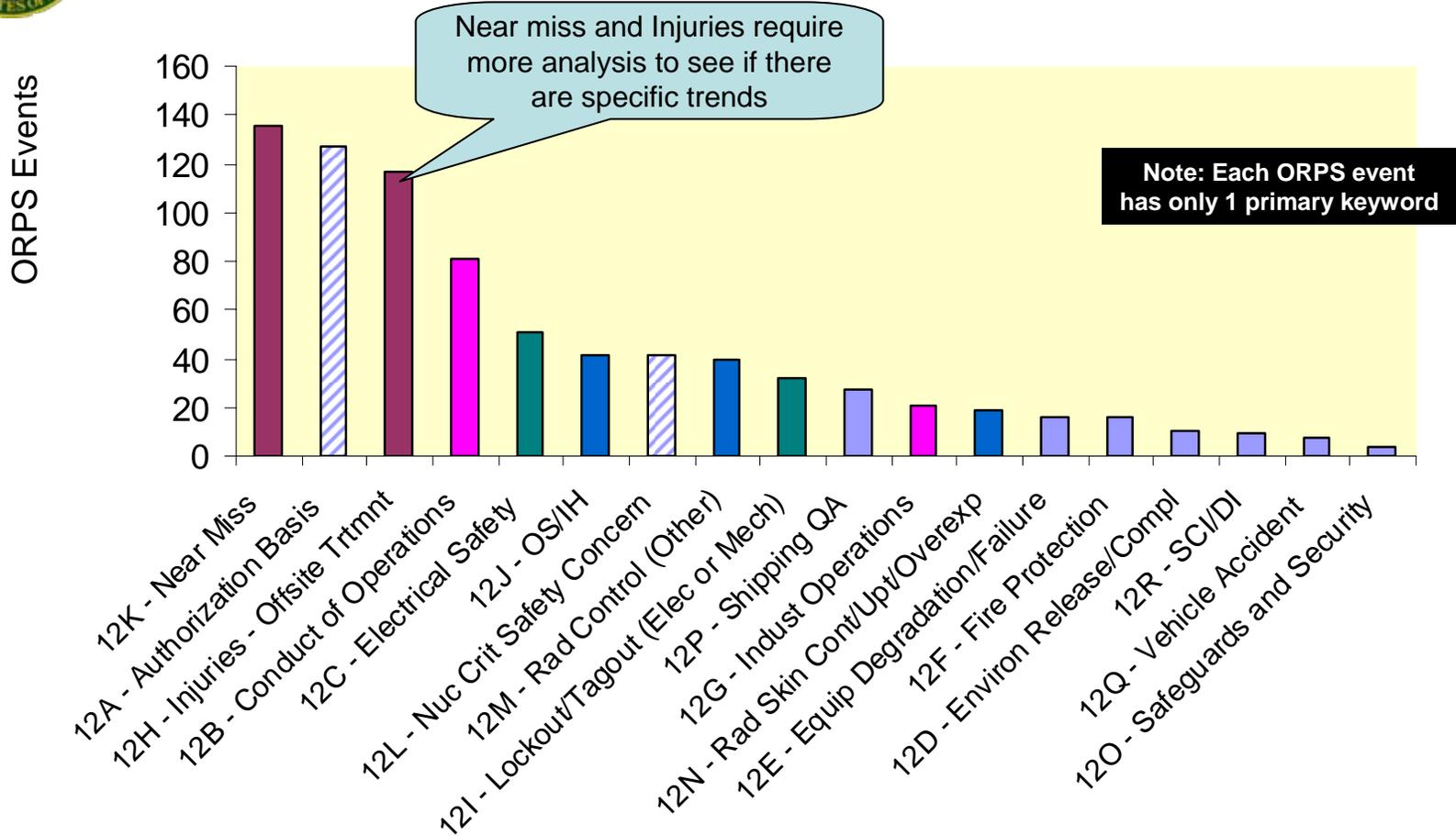
Construction is higher, about one-third (16 of 49).

Injury events in ORPS that contain either "12J" (Injuries – Offsite Treatment) or "12H" (Occupational Safety and Industrial Hygiene).



Training Related Cause Codes by ORPS Primary Keywords

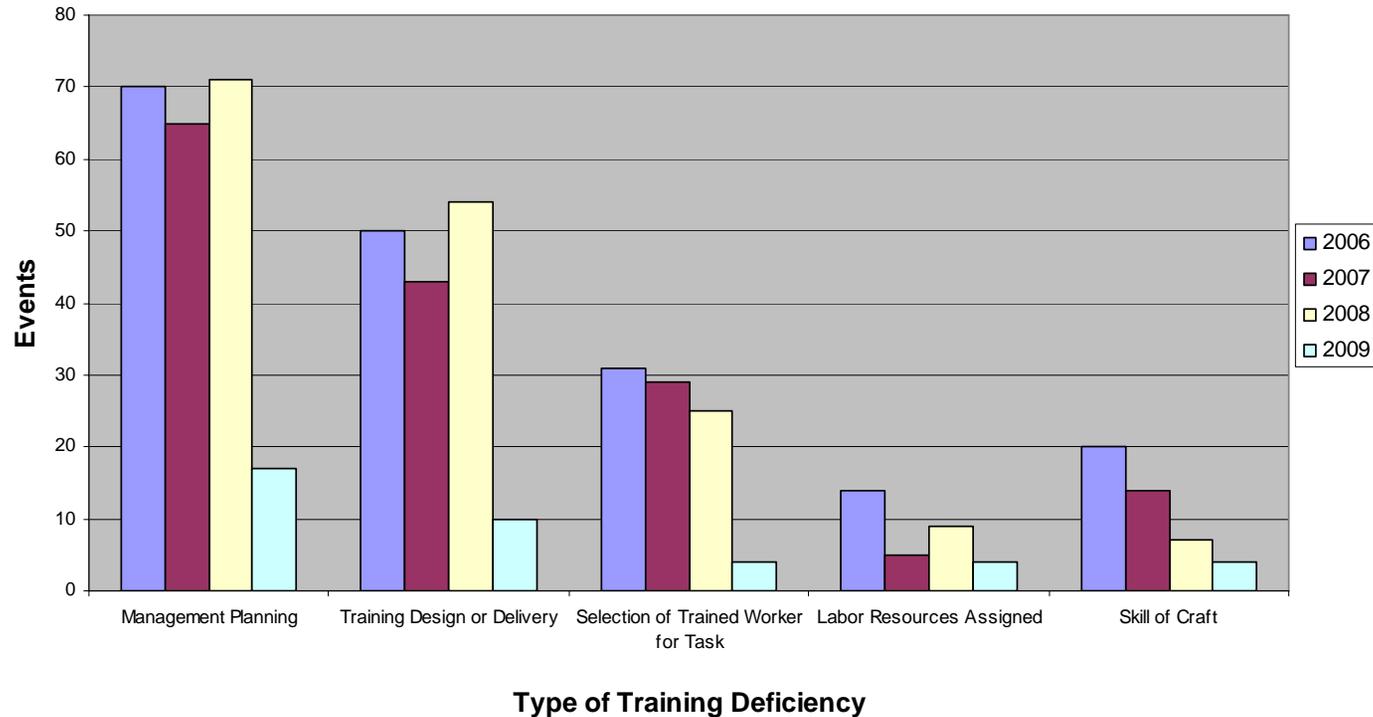
2004 thru 6/11/09



1. Nuclear and criticality safety
2. Conduct of operations
3. Electrical/LOTO
4. Industrial hygiene and radiation control



Cause Coded Training Events by Type of Training Deficiency Between 1/1/2006 to 5/31/2009



Training-related Causal Factor codes reported in ORPS were grouped into 5 categories to better understand the types of training deficiencies identified.



Grouped Training Cause Codes



Management Planning:

A4B1C02	Job performance standards not adequately defined
A4B5C08	Change related training or re-training not provided or not adequate
A6B1C01	Decision not to train
A6B1C02	Training requirements not identified

Training Design and Delivery:

A4B2C04	Resources less than adequate to assure adequate training was provided
A6B2C01	Practice or "hands on" less than adequate
A6B2C03	Refresher less than adequate
A6B3C01	Training objectives less than adequate (LTA)
A6B3C02	Inadequate content
A6B3C03	Training on new work methods LTA

Selection of Trained Worker for Task:

A3B4C01	Individual capabilities to perform work less than adequate
A4B2C09	Personnel selection did not assure worker motives/job description
A4B4C09	Assignment did not consider worker's need to use higher order thinking
A4B4C10	Assignment did not consider effects of worker's previous experience
A4B4C11	Assignment did not consider worker's ingrained work habits

Labor Resources Assigned:

A4B3C05	Less than adequate number of trained/experienced workers assigned
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Skill of Craft:

A6B1C03	Work incorrectly considered "skill of the craft"
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Conclusions



- Training is cited as a cause in about 15% of the ORPS reports that have at least one cause listed
- Training deficiencies are cited in about 20% of the reports where injuries occur
- The vast majority of events with training as a cause happen during normal operations, construction, and maintenance activities
- Most of the training issues relate to management issues or errors not necessarily inadequate worker training
- The most notable issues that could indicate the need for more attention:
 - Nuclear and criticality safety
 - Electrical safety



Questions?