



DOE Subpart H Report



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NESHAPs Subpart H Requirements Summary



- Dose to a member of the public (MEI) may not exceed 10 mrem per year
- Dose to a member of the public must be estimated using the CAP-88 software, or other EPA-approved model or method.



Approved Dose Models



- CAP88-PC
 - V 1.0 – DOS-based
 - V 2.0 – Windows-based
 - V 2.1 – Updated Beta version
 - V 3.0 – latest version
- COMPLY



NESHAPs Subpart H



Requirements (cont'd)

- Continuous monitoring of emissions is required for facilities that may exceed 1% (.1 mrem/yr) of the dose limit for a member of the public
- Stack monitoring methods and quality assurance requirements specified in the regulation must be implemented at each site



NESHAPs Subpart H



Requirements (cont'd)

- Under Subpart H of 40 CFR 61, DOE facilities are required to report radionuclide air emissions annually to the EPA.
- EPA interpreted the regulation to include unmonitored and diffuse sources as well as monitored stack sources.



Radionuclide Air Emissions

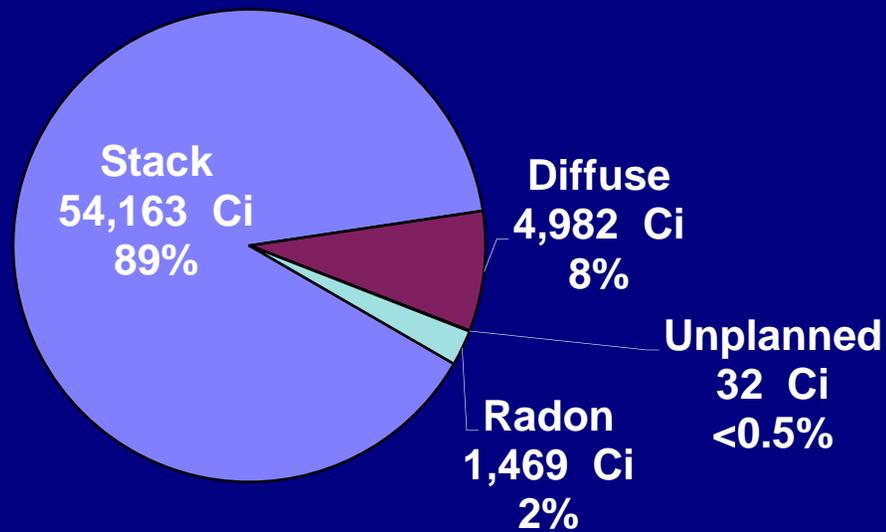


Reported by DOE Facilities

- Radionuclide emissions are reported by *type of source* (point or diffuse)
- Emissions of radon and unplanned radionuclide releases, although they are not specifically regulated under Subpart H, are also reported



2008 DOE Air Emissions by Source Type





Radionuclide Air Emissions



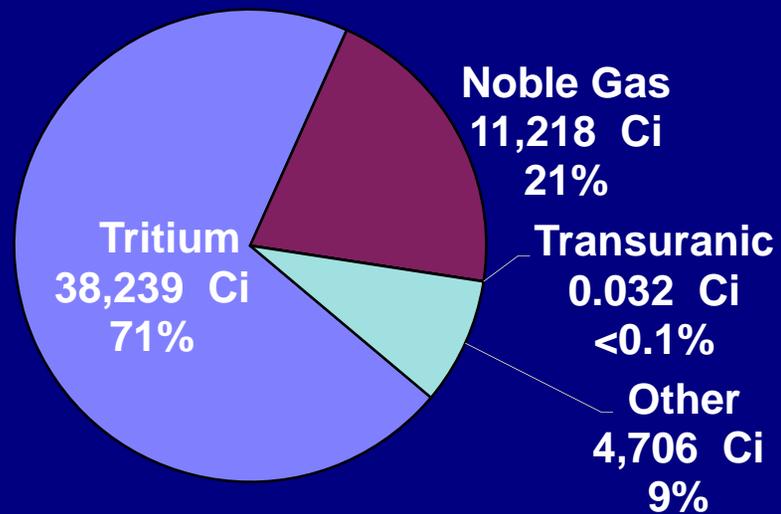
Summary of DOE Site Reports

Emissions are summarized by
radionuclide category:

- Tritium
- Noble gases
- Transuranics
- Other radionuclides



2008 DOE Point Source Emissions by Category





Radionuclide Air Emissions

10-year window

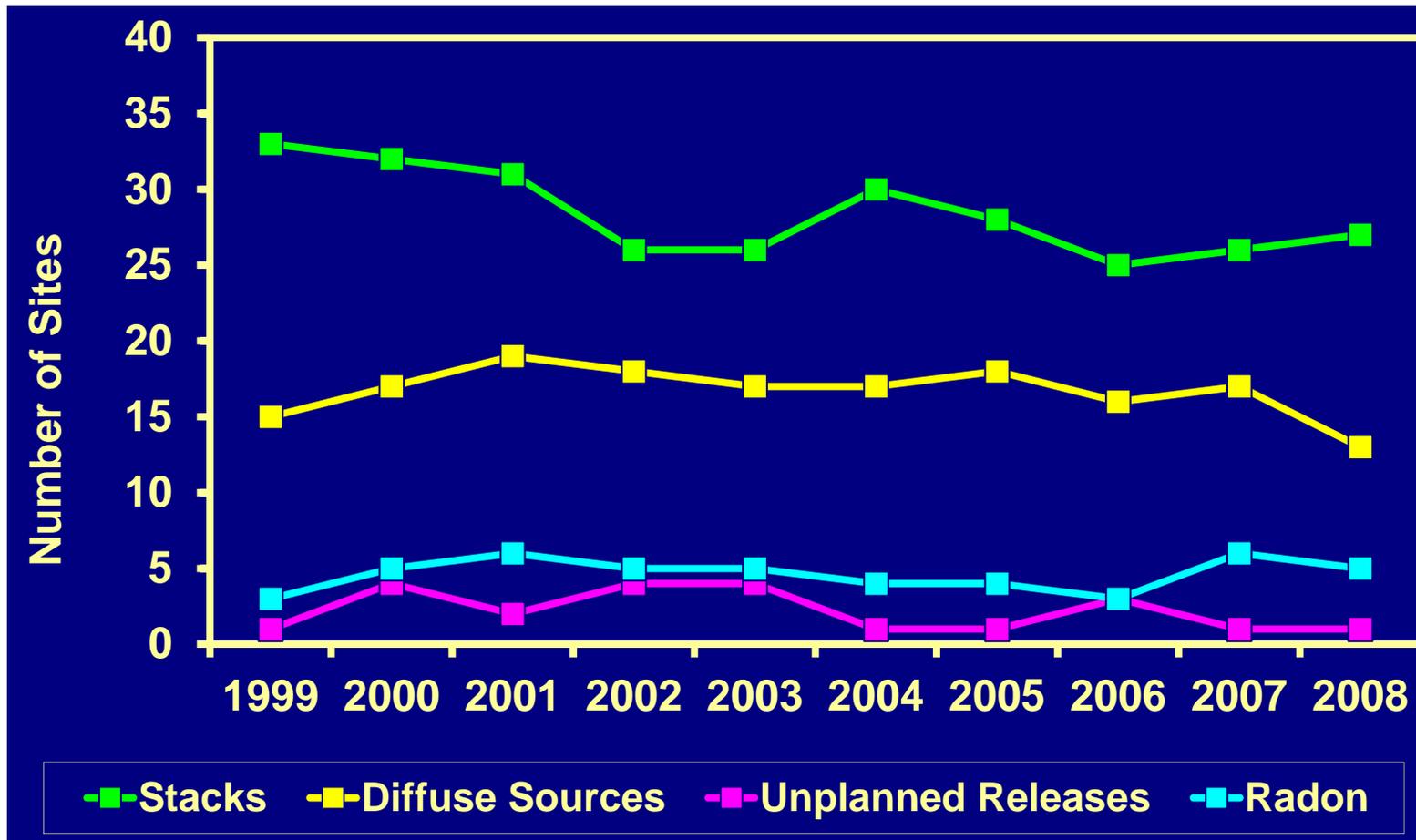


DOE-wide summaries of air emissions and estimated doses from 1999-2008 are shown in the following graphs by:

- Type of source
- Radionuclide category

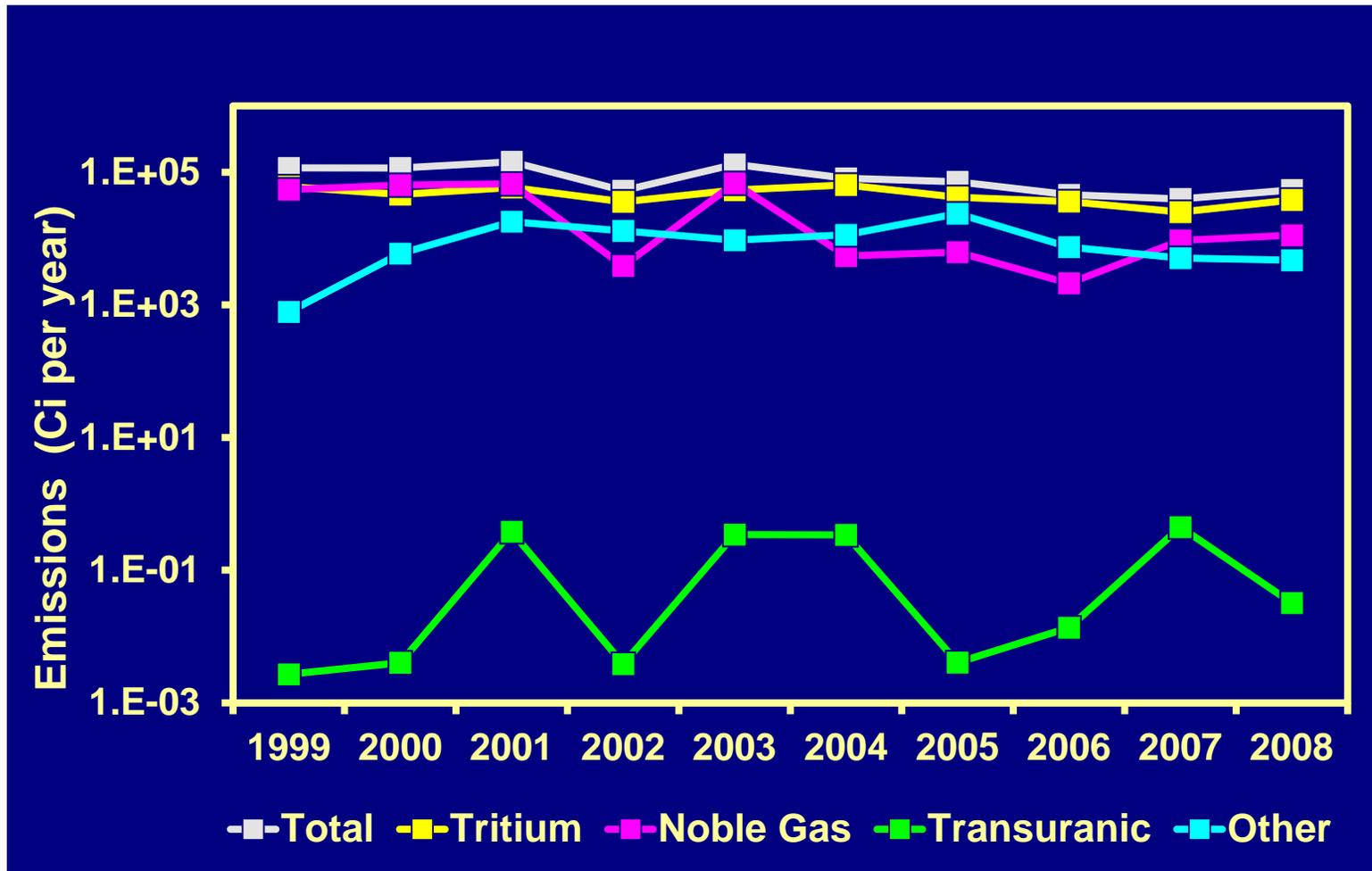


Number of DOE Sites Reporting Radionuclide Air Emissions





DOE Site Emissions by Radionuclide Category





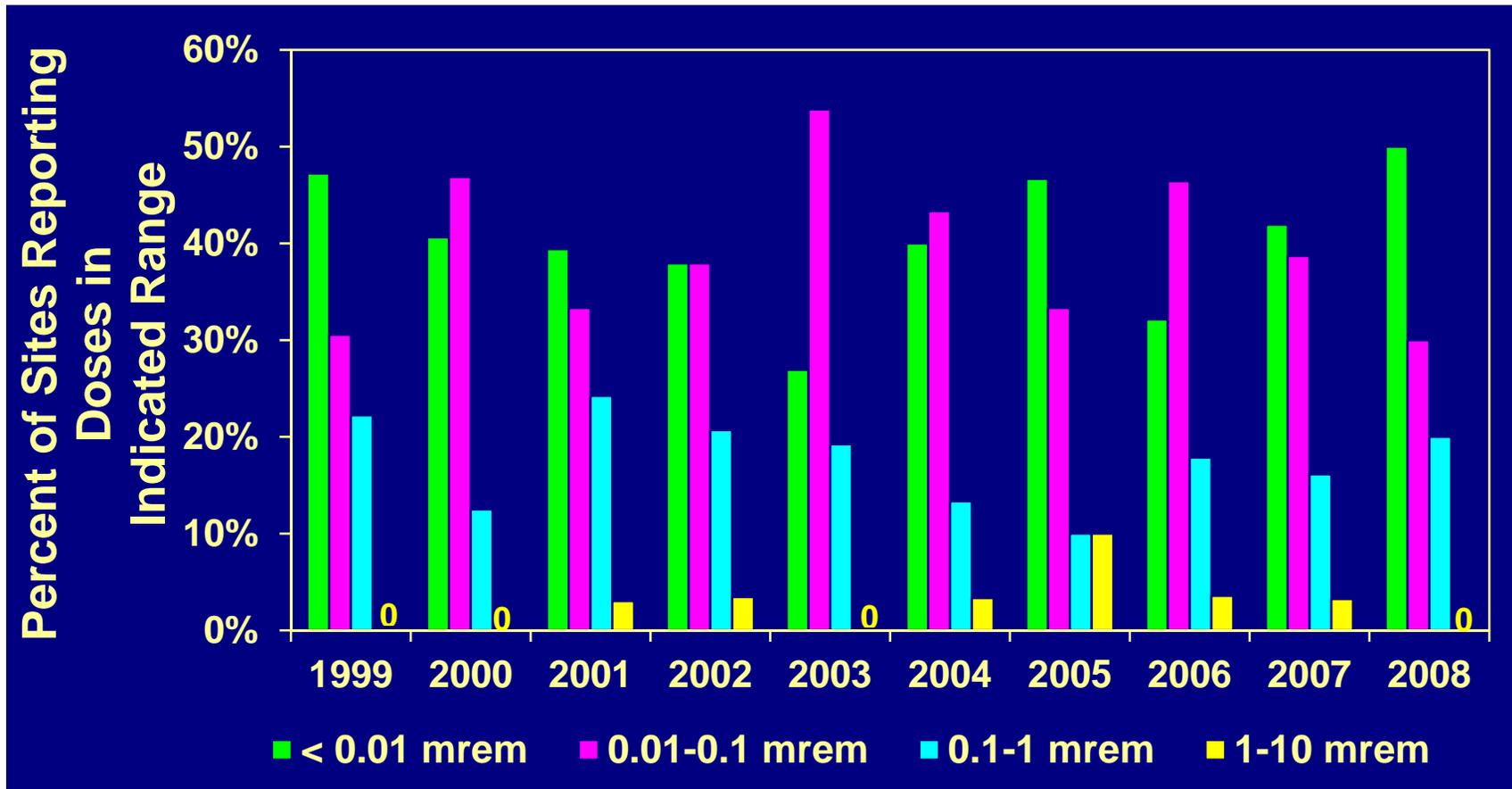
Dose to Offsite Maximally Exposed Individual (MEI)



- Dose to the MEI is ideally estimated separately for point and diffuse type sources
- Some MEI dose is all from diffuse sources
- The following graphs present estimated dose to the offsite MEI for routine emissions from point and diffuse sources during 1999-2008

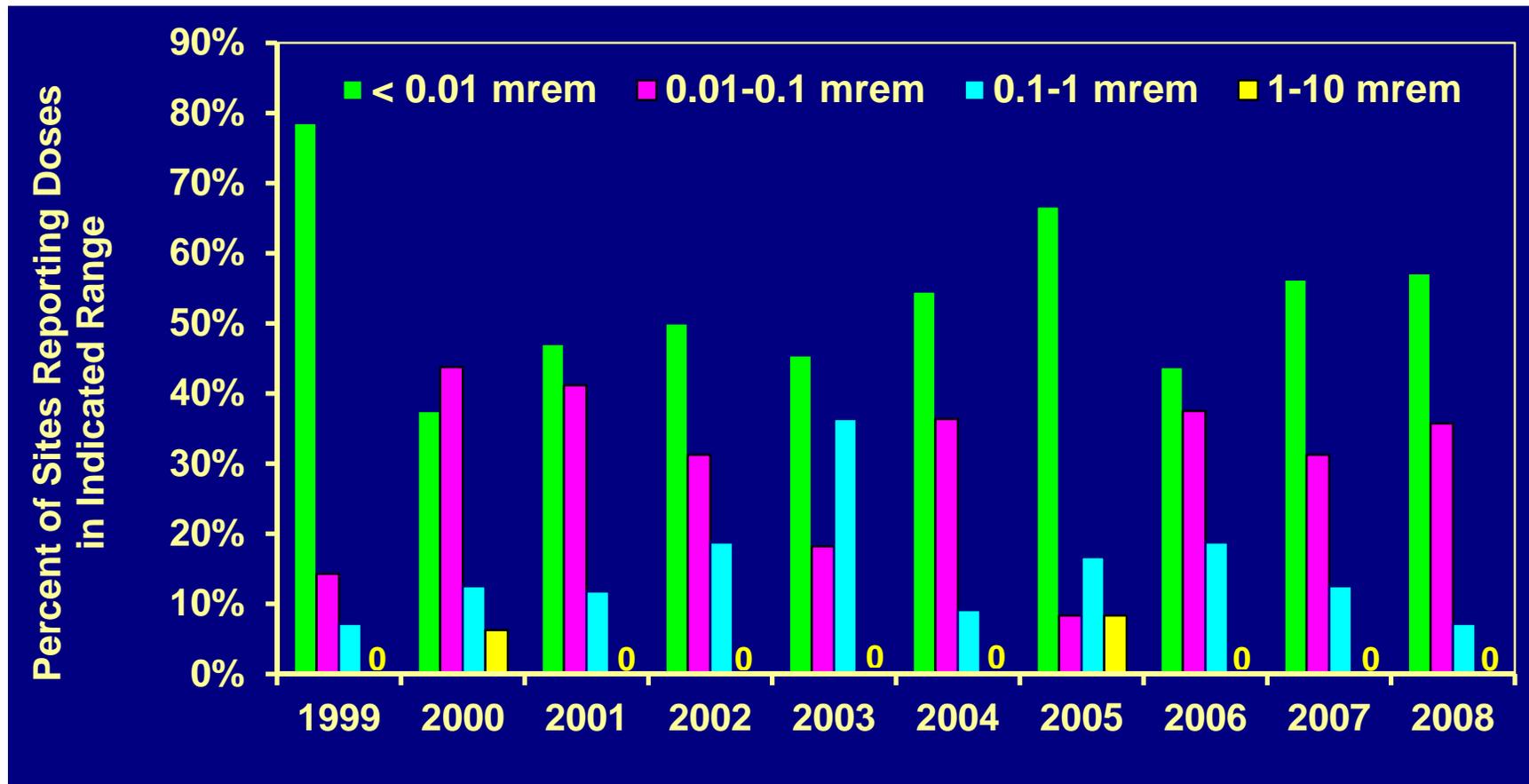


Estimated MEI Dose from Routine Emissions CY 1999-2008



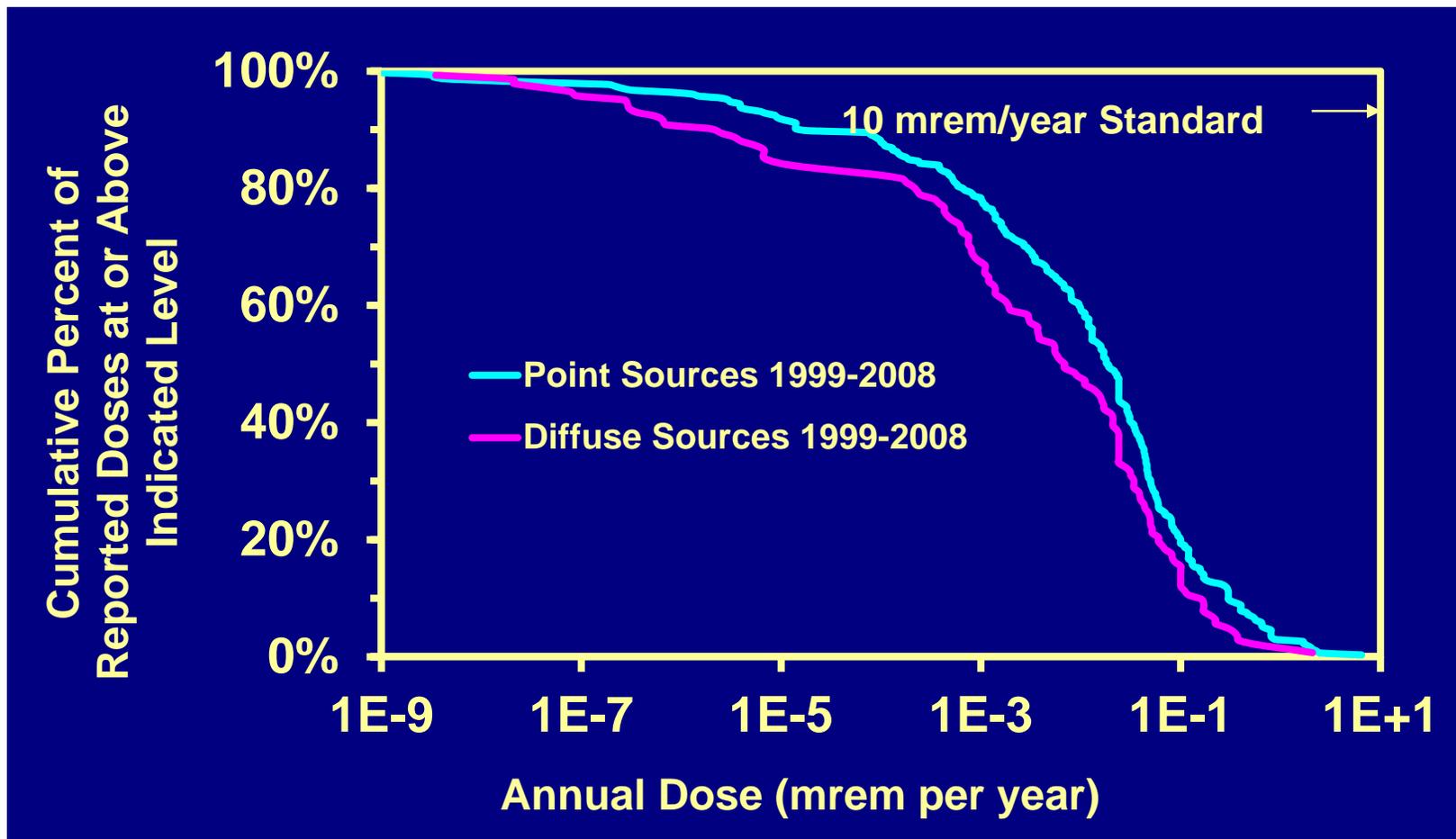


MEI Dose from Diffuse Sources CY 1999-2008





Cumulative Dose Distribution Point and Diffuse Sources CY 1999-2008





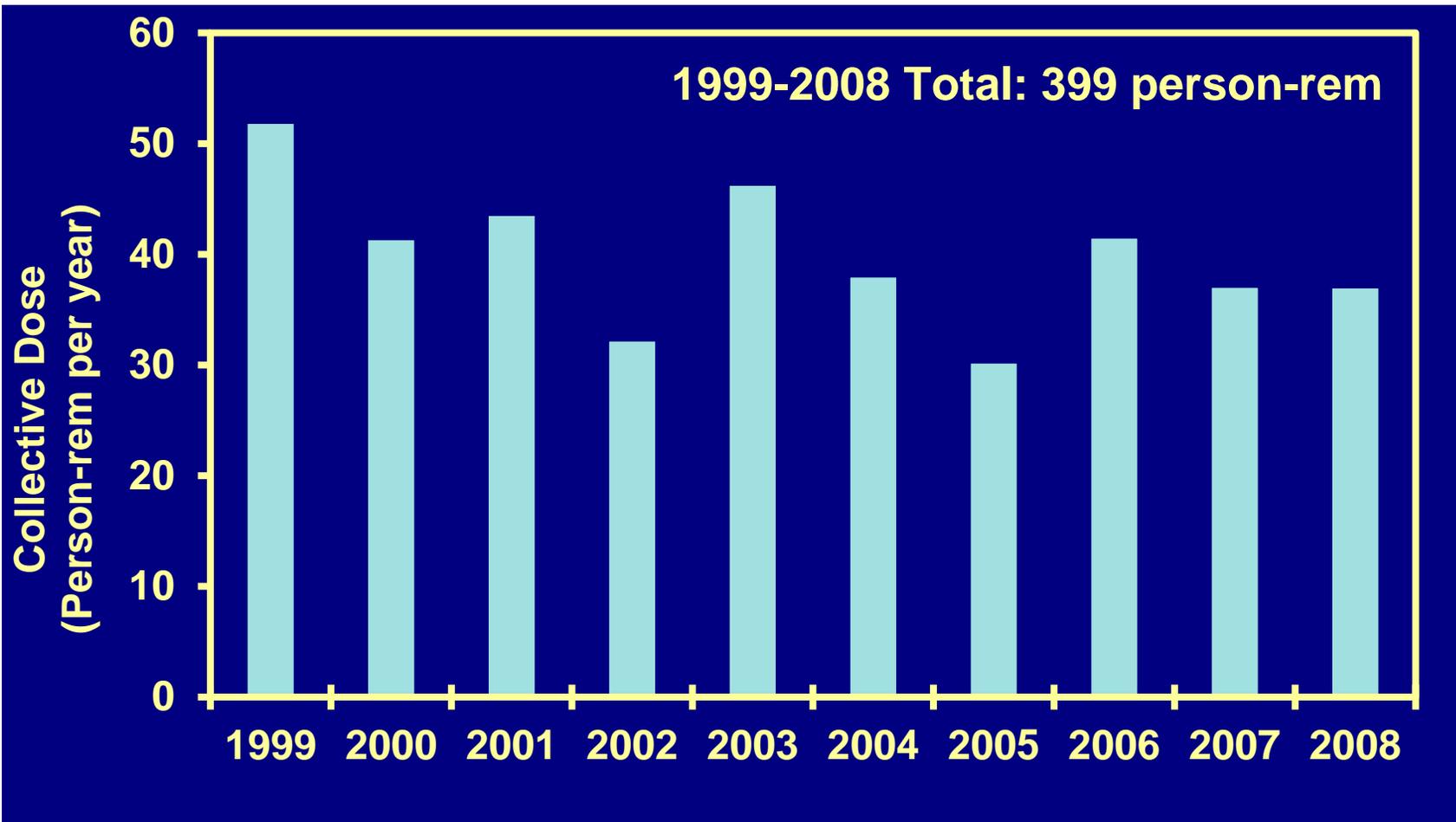
Other Information



- In addition to dose from routine emissions, DOE provides information on dose to individual members of the public from radon and unplanned releases
- Estimated Collective dose to the population within 50 miles of DOE facilities is also provided in DOE sites' annual reports

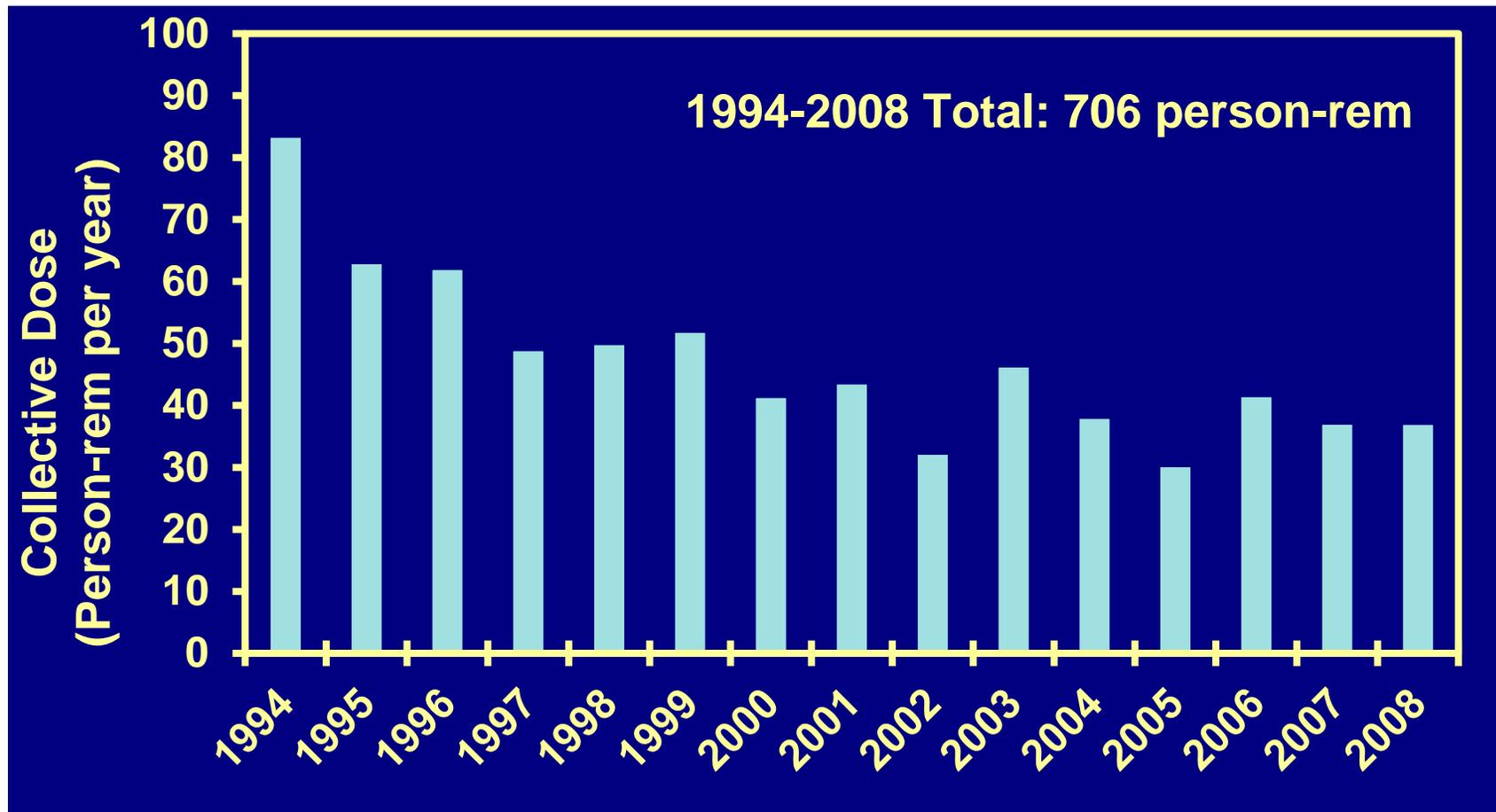


Total Population Dose from DOE Site Air Emissions CY 1999 - 2008



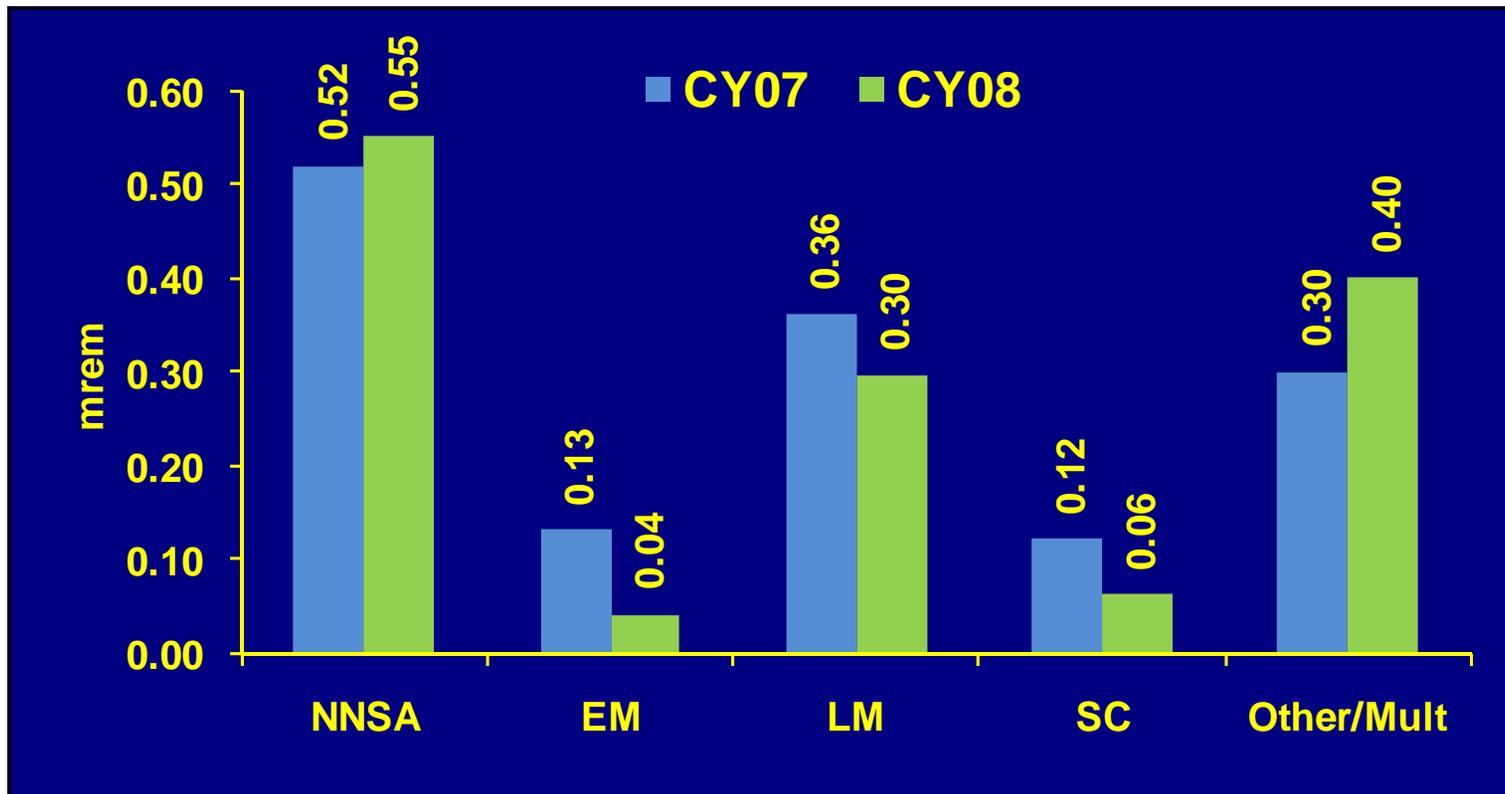


Total Population Dose from DOE Site Air Emissions CY 1994 - 2008



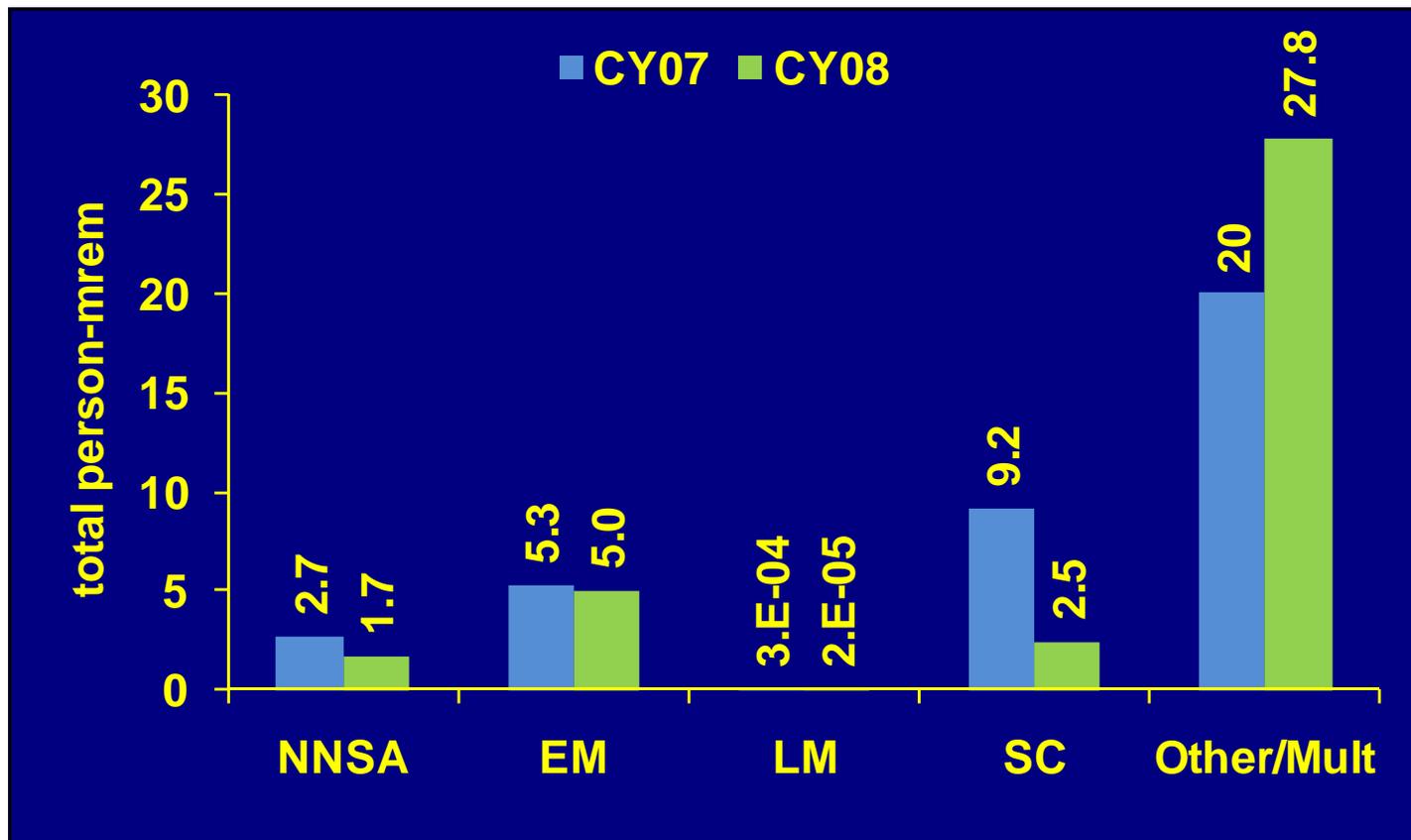


MEI Dose by Program Office



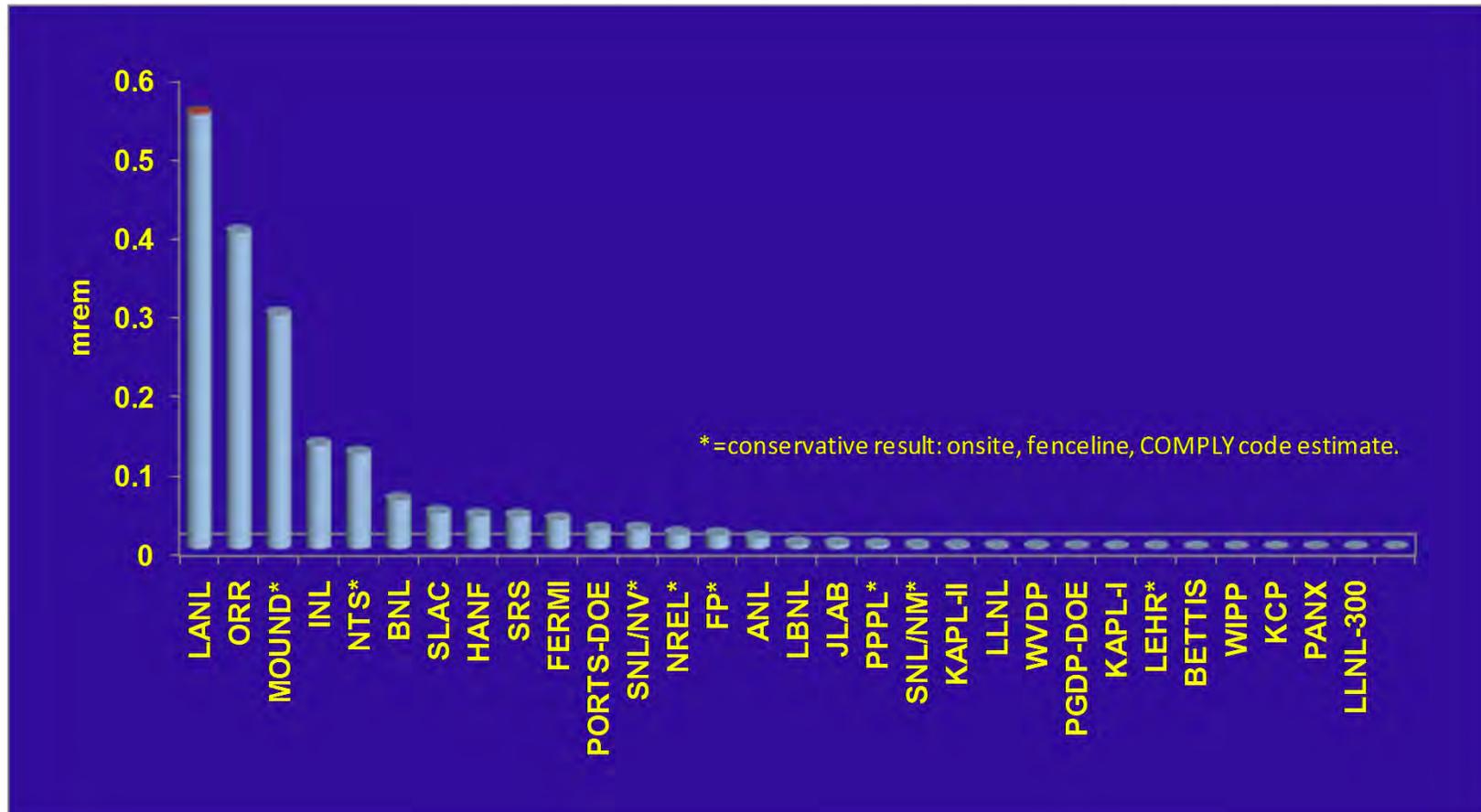


Population Dose by Program Office



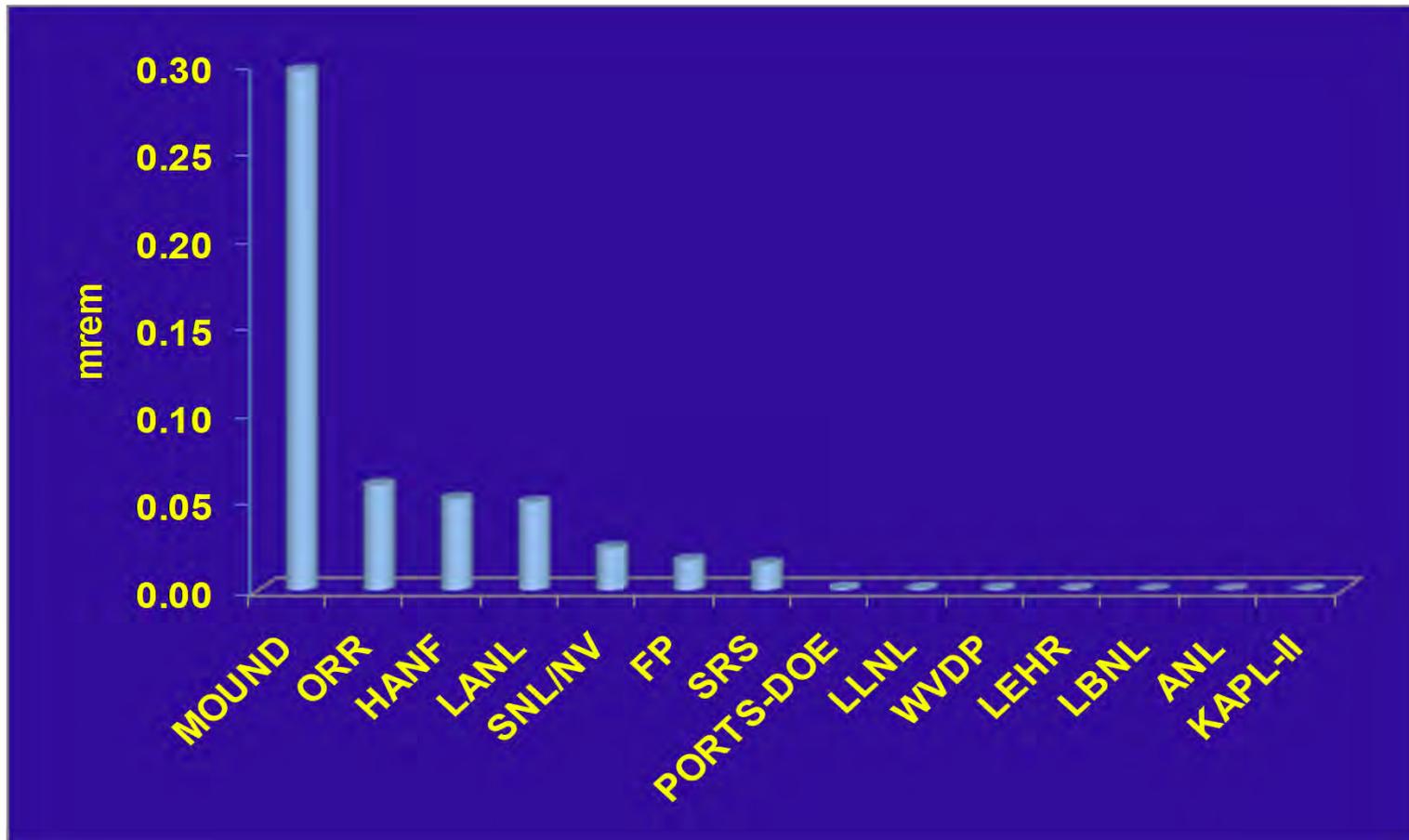


2008 MEI Dose





2008 MEI Diffuse Dose





Compliance Status



- In CY 2008, all DOE facilities were well below the annual 10 mrem/yr regulatory standard for dose to the offsite MEI
- DOE facilities are currently in compliance with radionuclide NESHAPs emissions monitoring requirements



Current Subpart H Issues



- CAP 88 PC Version 3
 - Model problems & fixes
 - LLNL Dose calculation Verification Study
 - Update of dose coefficient database
 - Software QA
- “Any” Member of the Public