



DOE Subpart H Report

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**Annual NESHAP Meeting on Radiological Air
Emissions**

Baltimore, MD

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NESHAPs Subpart H Requirements



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



NESHAPs Subpart H Requirements (cont'd)



- Continuous sampling of emissions is required for facilities that may exceed 1% (0.1 mrem/yr) of the dose limit for a member of the public.
- Stack emissions measurement methods and quality assurance requirements specified in the regulation must be implemented.



NESHAPs Subpart H Requirements (cont'd)



- Annual report of site radiological air emissions due to EPA by June 30.
- Unmonitored and diffuse sources as well as monitored stack sources must be included.



EPA Approved Dose Models



- CAP88-PC
 - V 1.0 (1992) – DOS-based
 - V 2.0 (1999) – Windows-based
 - V 2.1 (2002) – updated Beta version
 - V 3.0 (2007, revised in 2013)
 - V 4.0 (2014)-production release version
- COMPLY (1989)



Radionuclide Air Emissions

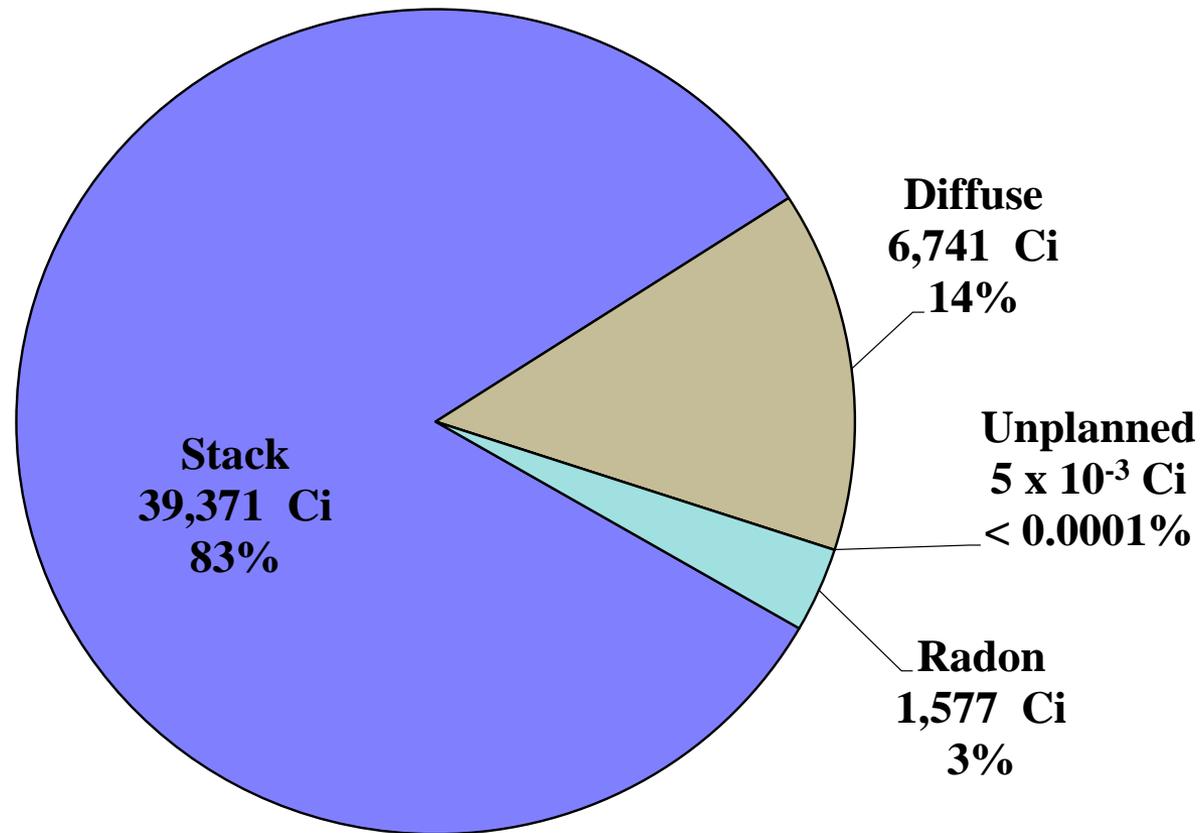


Reported by DOE Facilities

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



2012 DOE Air Emissions by Source Type





Radionuclide Air Emissions



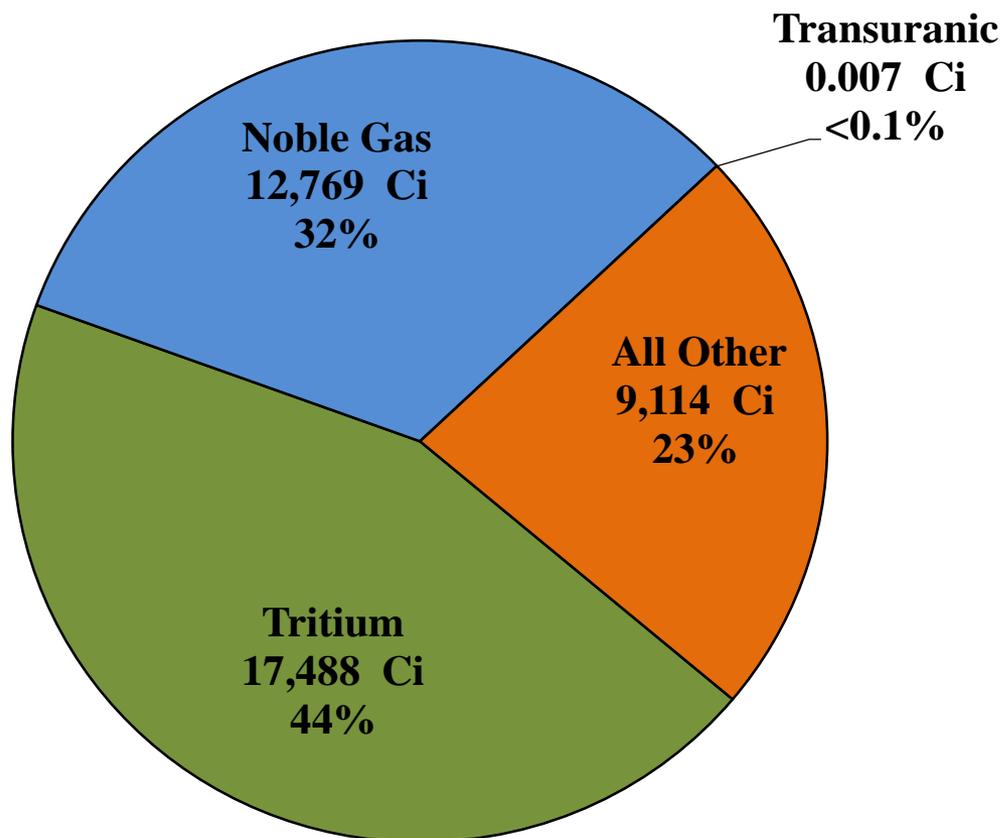
Summary of DOE Site Reports

Emissions are summarized by
radionuclide category:

- Tritium
- Noble gases
- Transuranics
- Other radionuclides



2012 DOE Point Source Emissions by Radionuclide Category

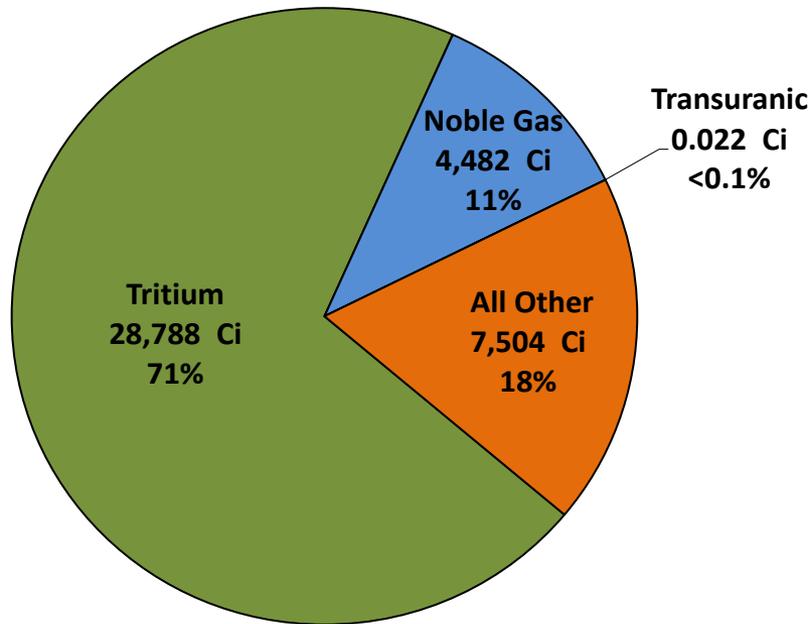




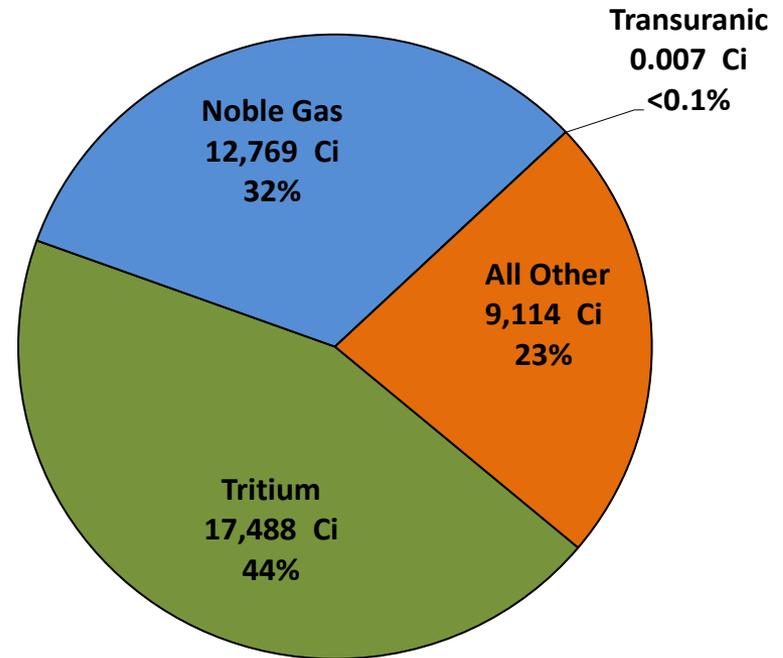
2011 and 2012 Comparison DOE Point Source Emissions by Radionuclide Category



2011
40,800 Ci



2012
39,400 Ci





Radionuclide Air Emissions

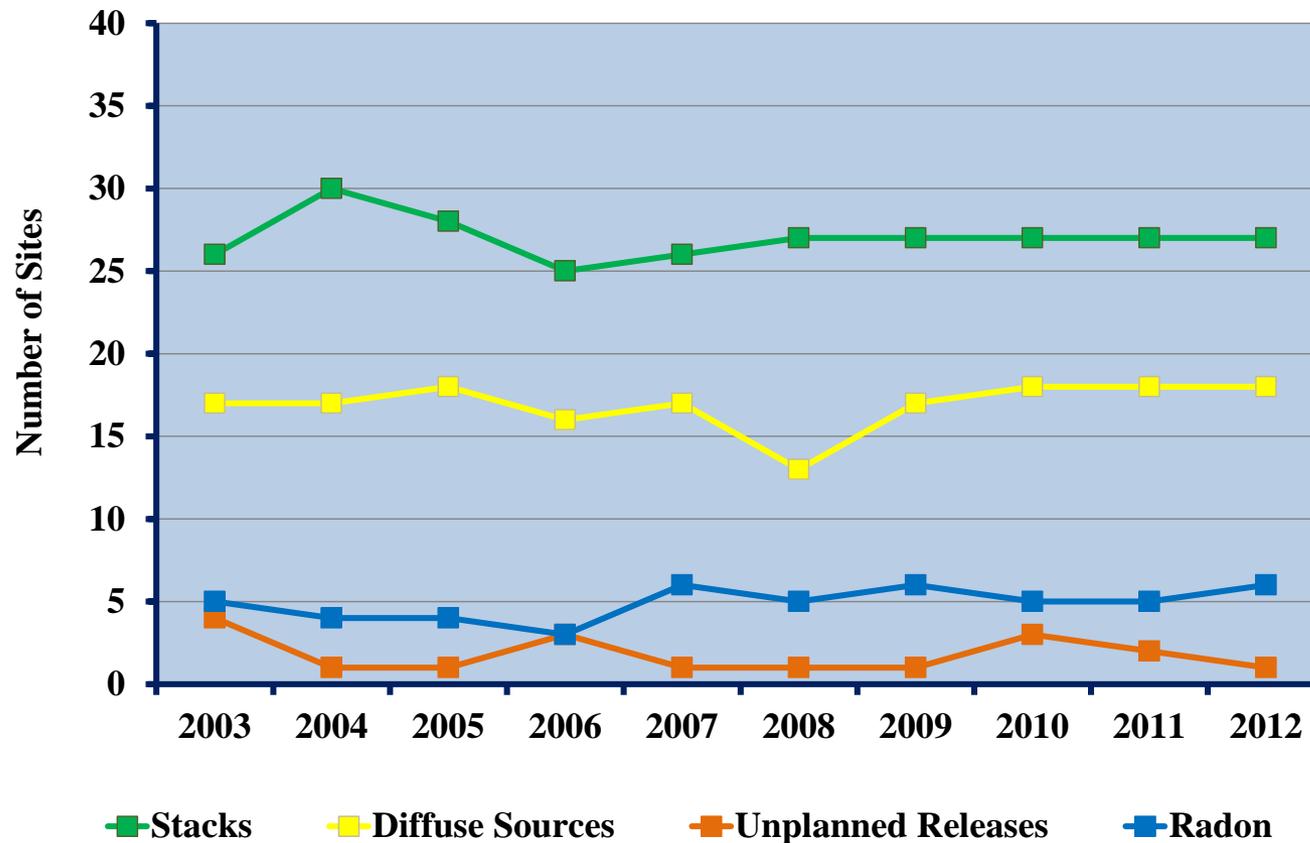


DOE-wide summaries of air emissions and estimated doses from 2003-2012 are shown in the following graphs by:

- Source type
- Radionuclide category



Number of DOE Sites Reporting Radionuclide Air Emissions

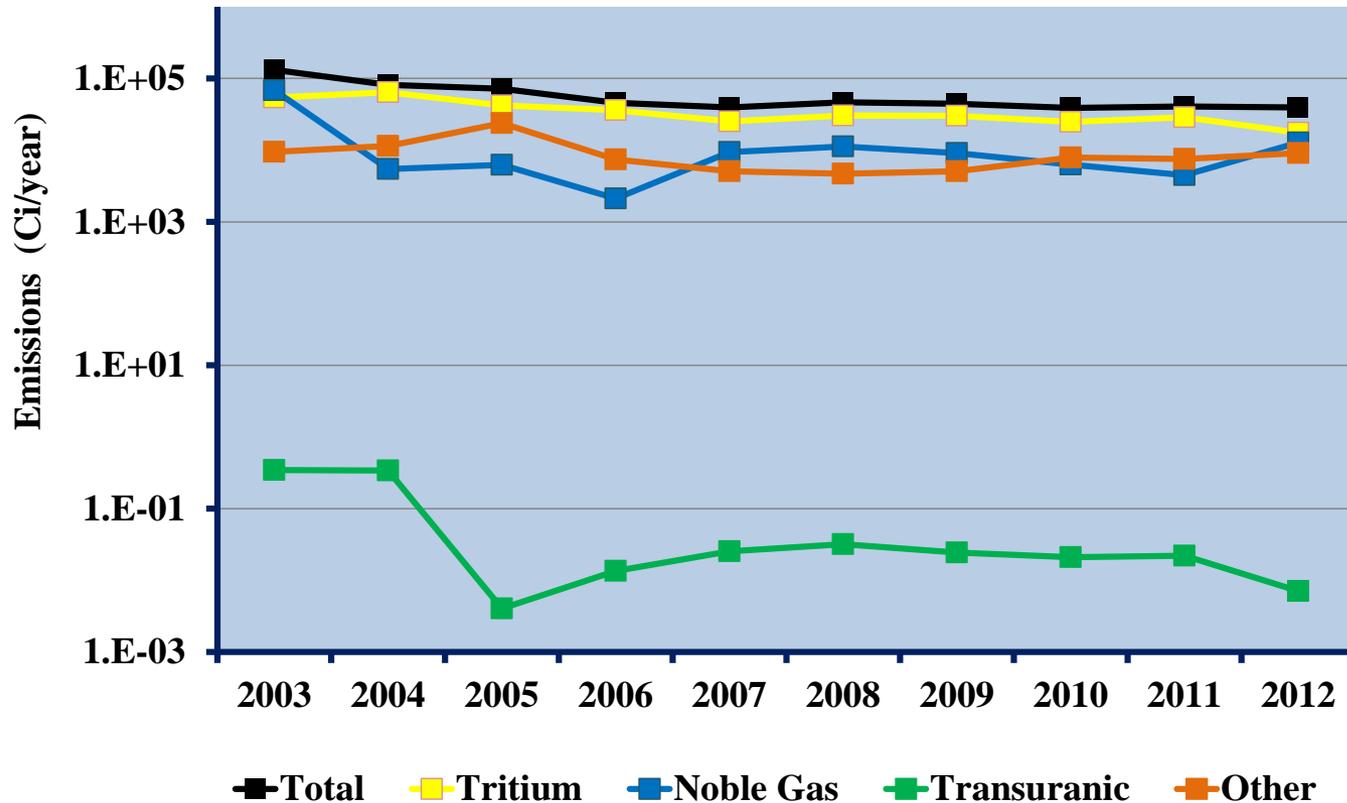




DOE Site Point Source Emissions by Radionuclide Category



POINT SOURCES

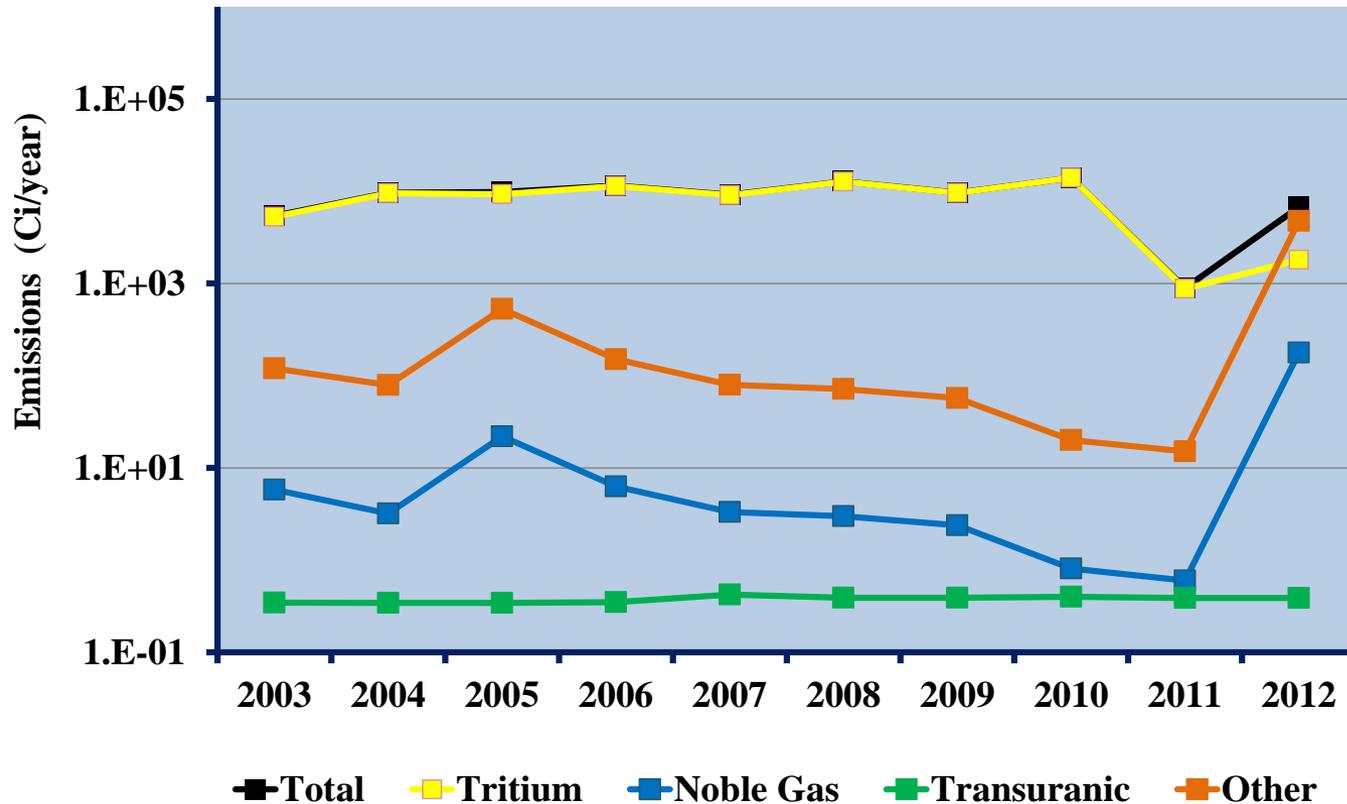




DOE Site Point Source Emissions by Radionuclide Category



DIFFUSE SOURCES





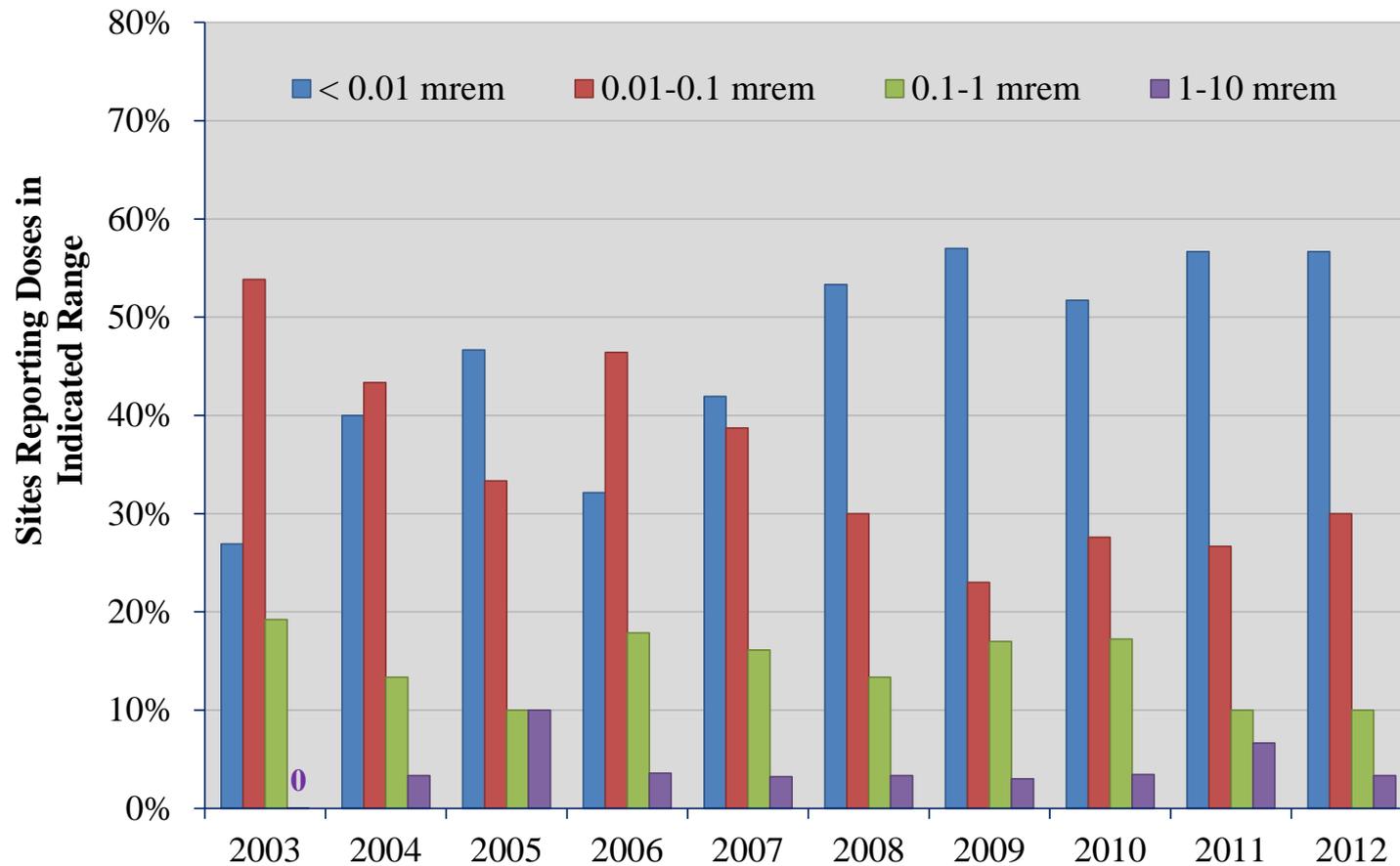
Dose to Maximally Exposed Individual (MEI)



- Reported dose to the MEI is for point sources and may have diffuse contribution estimate included.
- MEI dose at some sites is entirely from diffuse sources.
- The following graphs present estimated dose to the MEI for routine emissions from point and diffuse sources during 2003-2012

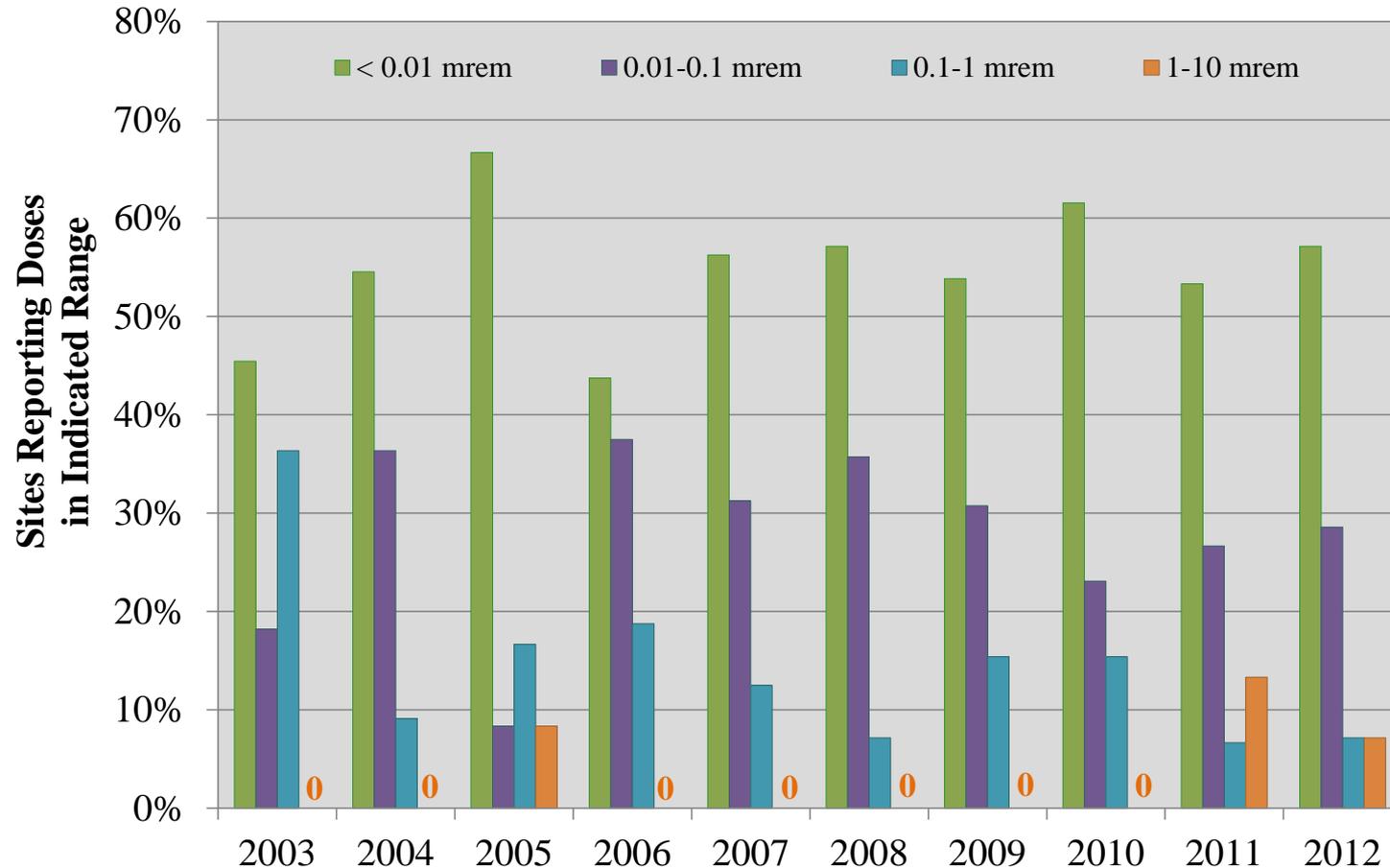


MEI Dose at DOE Sites 2003-2012





MEI Dose from Diffuse Sources Only 2003-2012





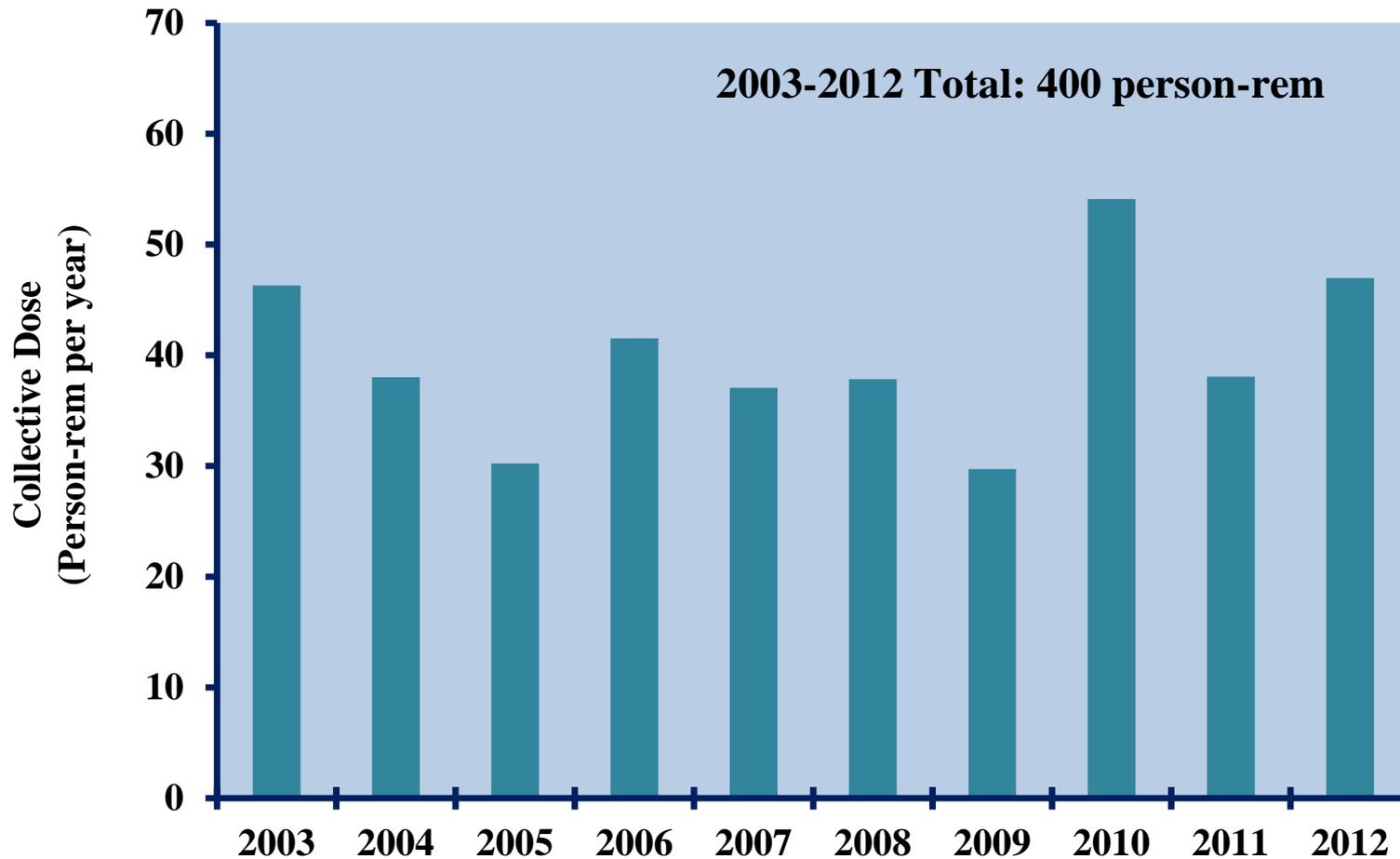
Supplemental Information



- Dose to individual members of the public from radon and from unplanned releases.
- Estimated collective dose to the population within 50 miles of DOE facilities is also included in most DOE sites' annual reports.

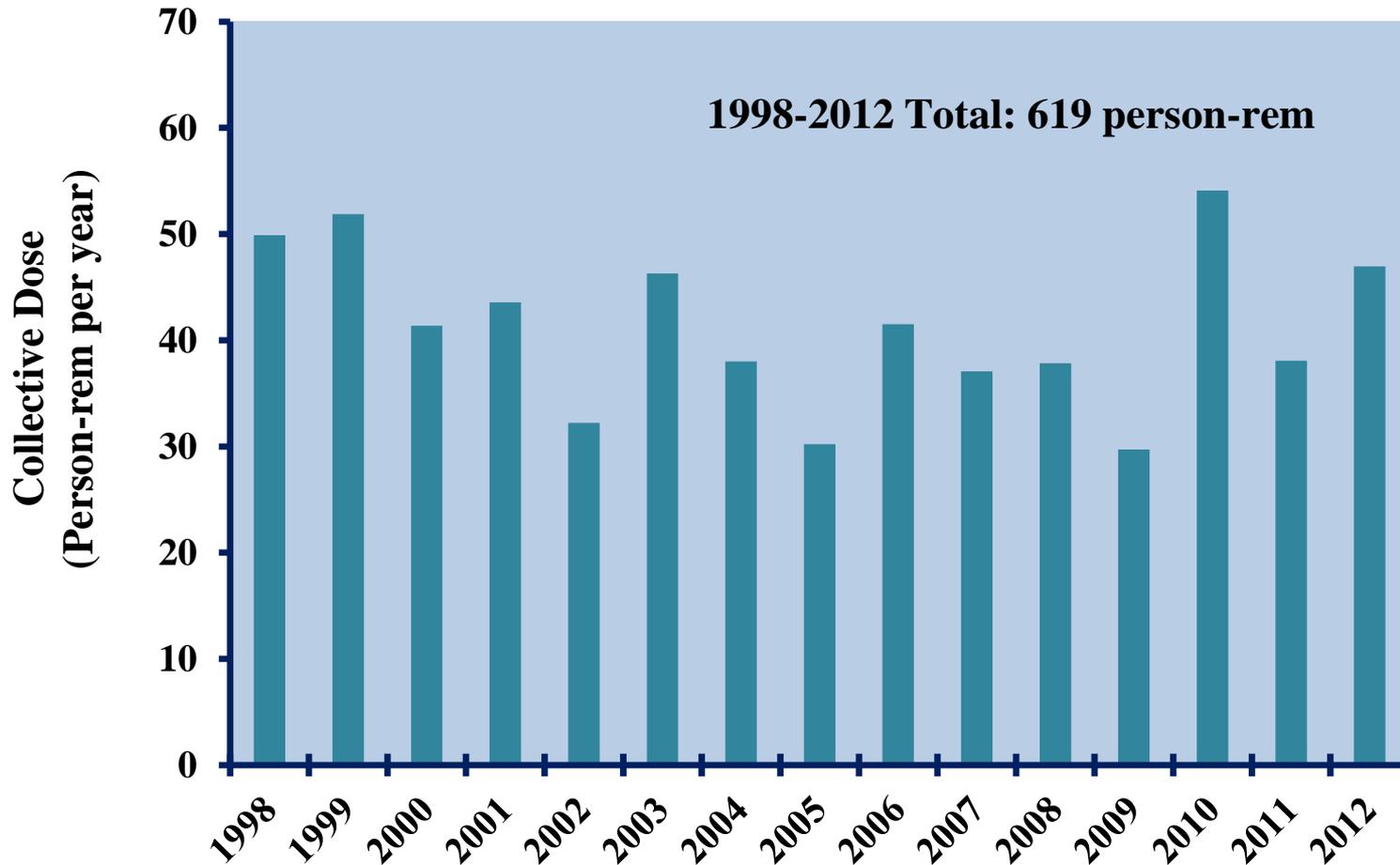


Total Collective Dose from DOE Site Air Emissions 2003 - 2012



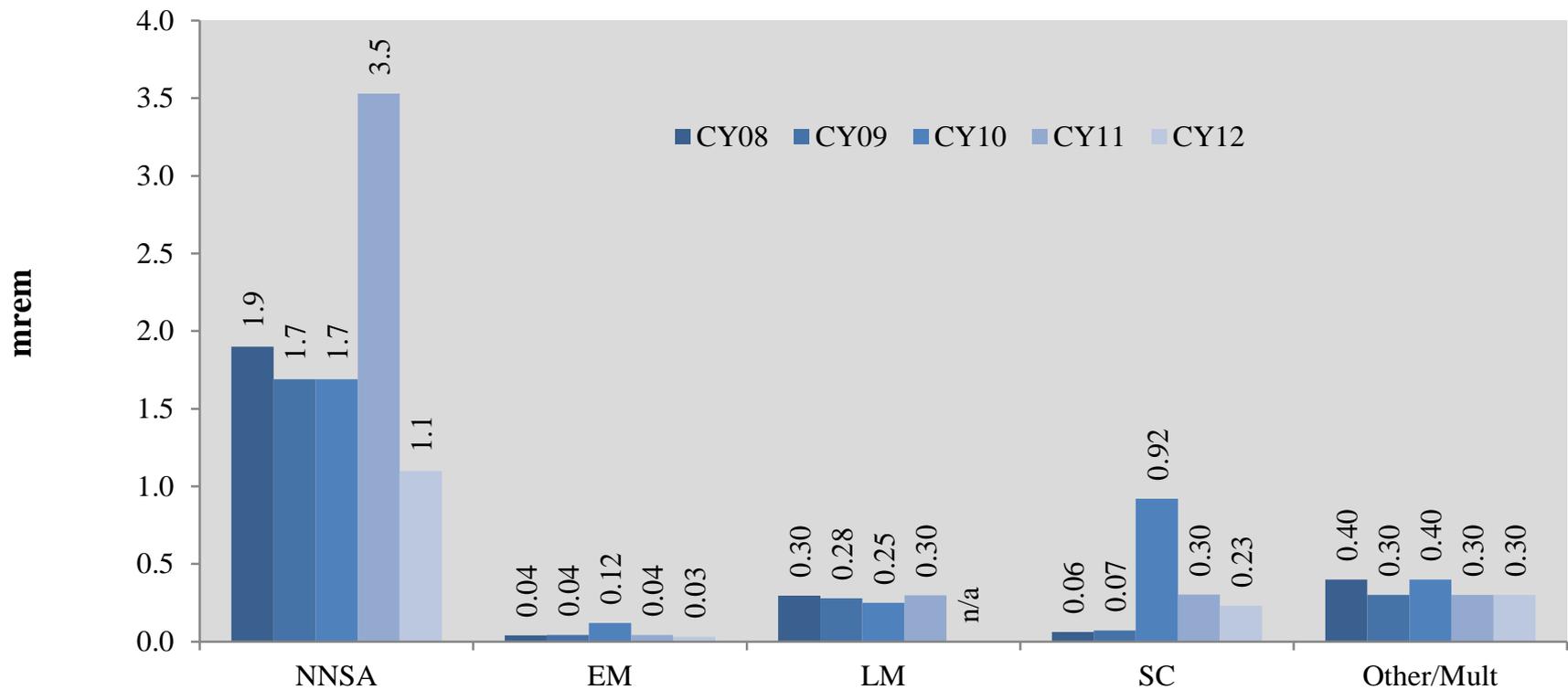


Total Collective Dose from DOE Site Air Emissions 1998 - 2012



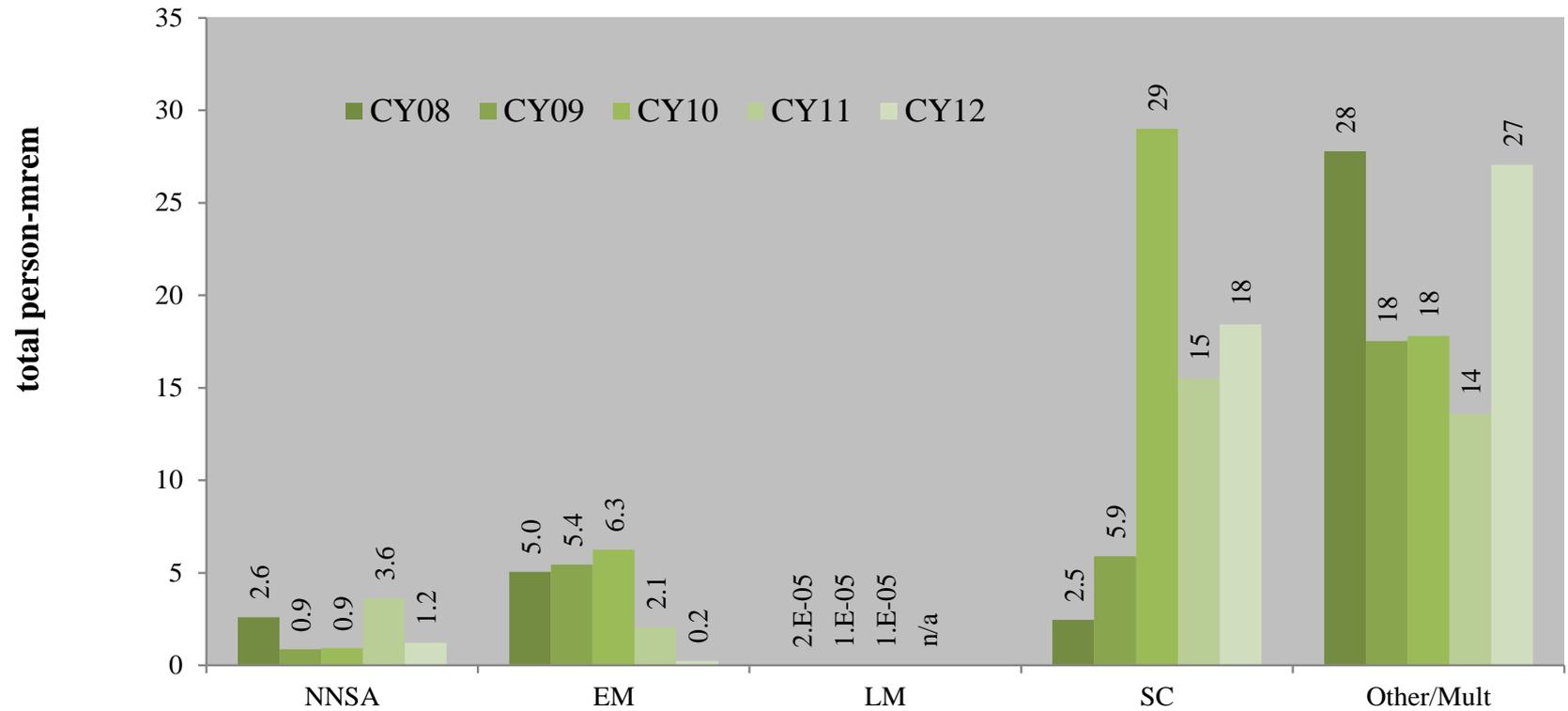


MEI Dose by Program Office



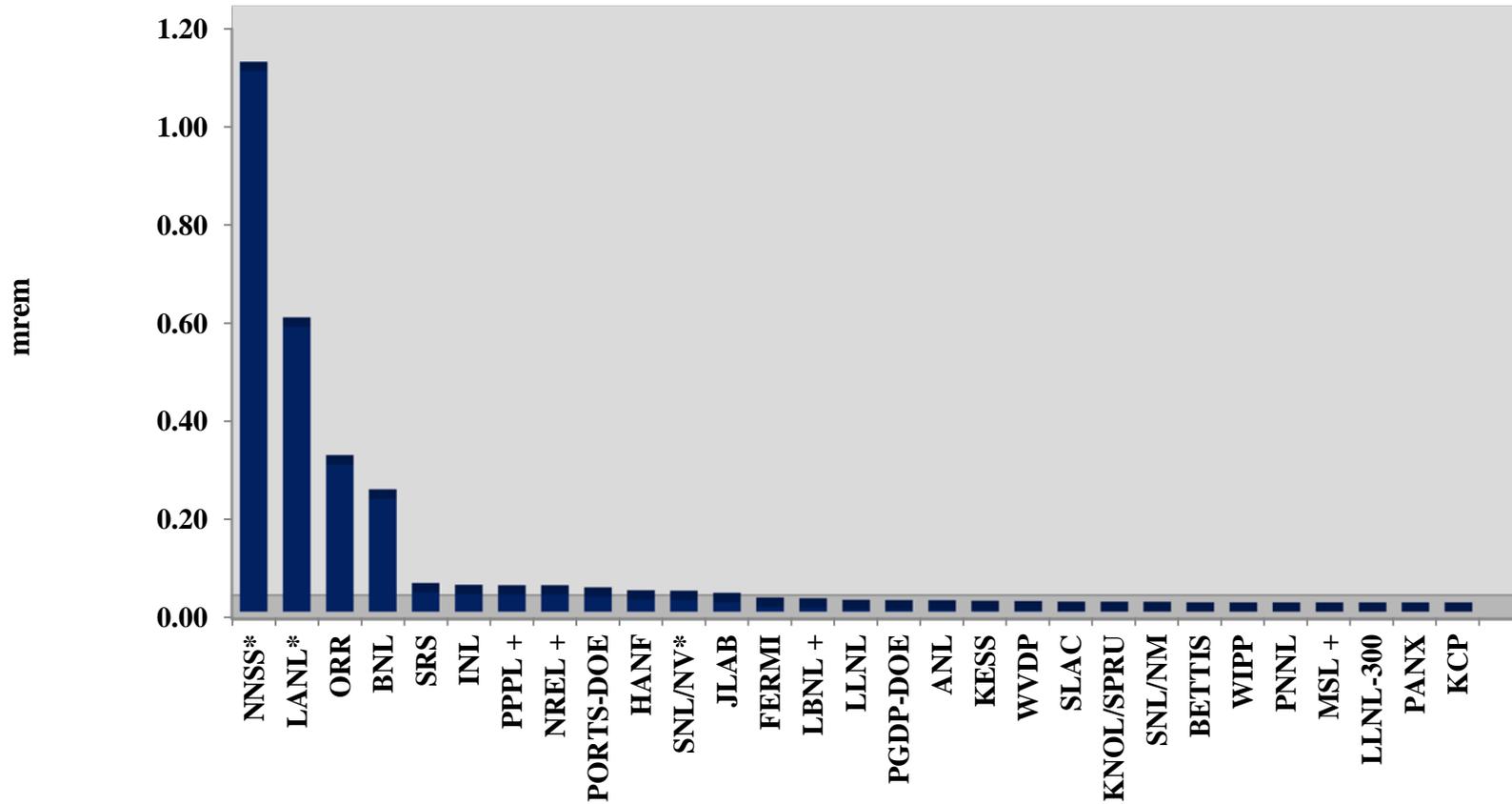


Collective Dose by Program Office



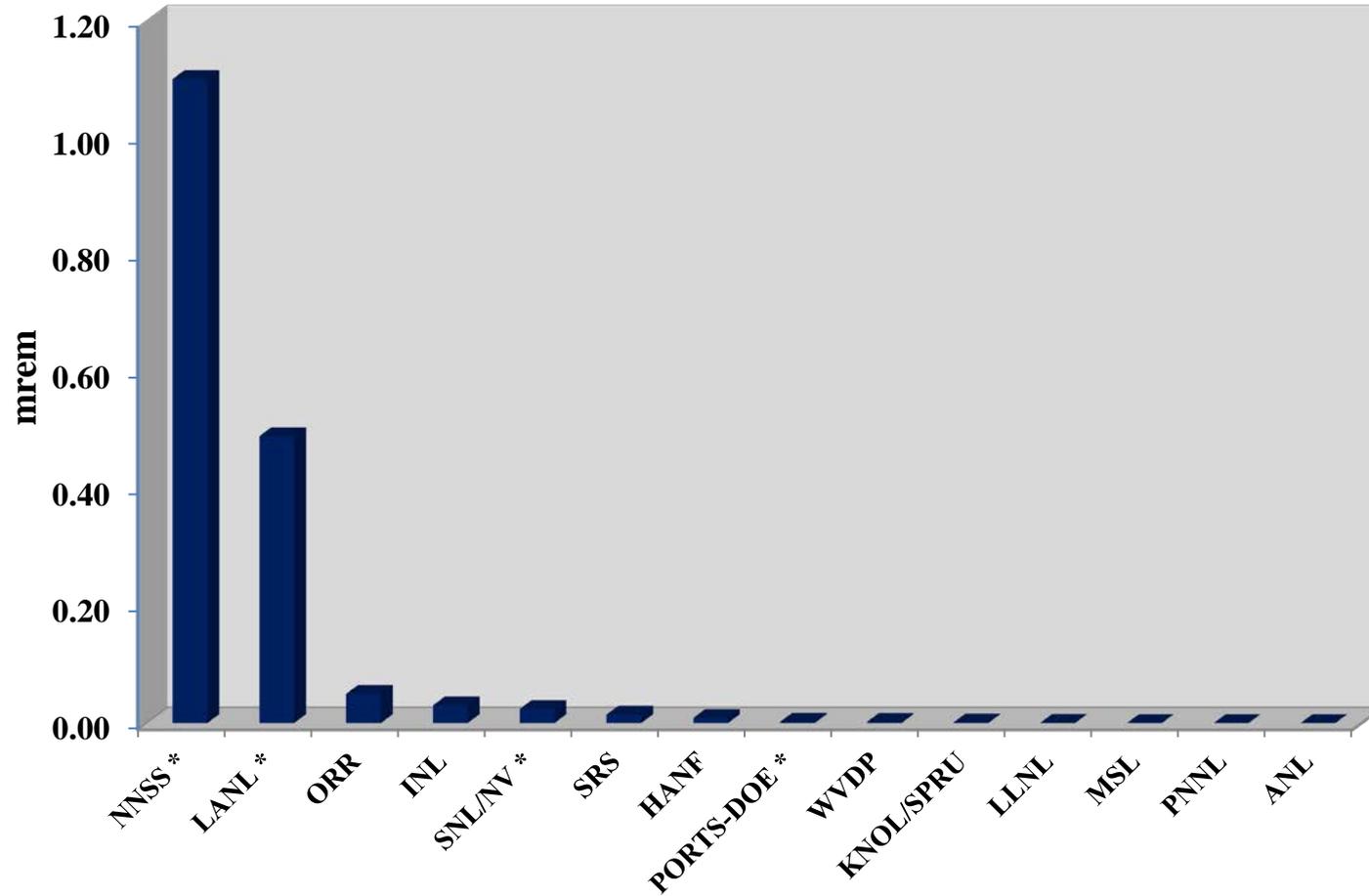


2012 MEI Dose





2012 MEI Dose Diffuse Sources





Compliance Status



- In CY 2012, all DOE facilities were below the annual 10 mrem/yr regulatory standard for dose to the offsite MEI
- DOE facilities are currently in compliance with Subpart H radionuclide emissions monitoring requirements



Current Significant Items



- CAP88 PC V4.0 software production version available for use but not for compliance purposes - January 2014



Thank You!