

D. PROCEDURE

The 100 mrem Report is written for the previous calendar year at the beginning of each year when all quarterly dose reports have been received from the dosimetry vendor (currently Landauer).

The procedure for writing the 100 mrem report is as follows:

Preparation:

1. Go into the web based content management system, ISU Box, in the E "100 mremRep" folder, Path: (Box) EHS Dept.- Radiation Safety Program
2. Open the 100 mrem Report completed in the previous year, and the Excel work sheet with tables 1 and 2.
3. Save the report under a new name in the following the format:
100mremrpt_YEAR_Final.
4. Review for references in the text for old dates, years, and doses. Update or delete where necessary.

Table 1:

1. Gather all dose reports from Landauer for the area and environmental badges for the previous year by opening the "100mremRpt" folder, Path: (Box) EHS Dept.- Radiation Safety Program
2. Fill in the doses for each quarter in Table 1. There are 3 types of dose reported for each area monitor in each quarter: the photon deep dose, photon skin dose and the total neutron dose (thermal plus fast). The numbers are separated by slashes. "M" means that the dose was below the reporting dose of 1 mrem, so enter these as zero. The eye doses are ignored for this report. If a neutron dose is not listed in the quarterly exposure report, enter a zero for the neutron dose.
3. Fill in the yearly dose totals (the last column in Table 1 of the 100 mrem Report). This is accomplished by adding the quarterly doses for the photon deep dose, photon skin dose and total neutron dose, respectively.
4. Verify that all area monitor locations were entered. It is best to cross-off each badge location on the quarterly dose reports as they are entered into the 100 mrem Report to ensure both that no area monitors were missed, and that no new area monitors were placed sometime during the year, that will need to be added to the report.

Table 2:

Table 2 calculates the total dose for the year (mrem/yr) for each of the area monitors that are in locations of public access. These locations are marked with an asterisk (*) in the quarterly dose reports. The formula used to complete Table 2 is shown on page 3 of the 100 mrem Report.

1. Fill in the "Total Exposure" column doses in mrem. This is the photon deep dose plus the neutron dose (thermal + fast), or the first value and the third value in the 100 mrem Report quarterly columns. If a new general public location monitor has been created during the year, be sure to add a row and include it in Table 2, ensure formulas in the spreadsheet are carried through to this new row.
2. Calculate the values for the second column by dividing the first column numbers (mrem) by 8766, which is the number of hours in a year.
3. Verify the occupancy factors (hrs/yr) in column three. A list of occupancy factors are given on page 3 of the 100 mrem Report. These values need not be altered, unless a change in traffic pattern occurred during the year that affected the status of the area being monitored. If a new badge has been added, determine the relevant occupancy factor from this list.
4. Calculate the doses for the "Total Dose" column by multiplying column 2 by column 3. These values should be in units of mrem/yr.

Conclusions:

The final section of the 100 mrem report involves a summary of the data reported in Tables 1 and 2.

1. The first section of the conclusions discusses the highest total dose to the public. Rewrite the paragraphs to reflect the area monitor with the highest dose (Table 2, column 4). This value is also entered into the text at the beginning of the report and is bolded.
2. The second section of the conclusions discusses the highest total exposure to the public from radiation-producing machines. Look-up the highest dose in Table 2, column 1 that came from radiation-producing machines and rewrite the paragraph to include this value.
3. The final section of the conclusions reports the results from the NESHAPS Report.

Note: There may be paragraphs in the old 100 mrem Report conclusions section that reflect specific event(s) that occurred during the previous year and are not

applicable to the current year being evaluated. Be sure to look for these paragraphs and delete if necessary.

Attachments:

There are 3 items that should be attached to the 100 mrem Report.

1. NESHAPS Report – this report is kept in the folder “NESHAPS”, Path: (Box) EHS Dept.- Radiation Safety Program.
2. A copy of the full-power AGN-201 survey – EHS keeps copies of these surveys in AGN-201 file in the EHS office room 101A.
3. AGN-201 operating summary – this should include monthly operating hours and energies (watt-hr), plus a monthly listing of Ar-41 releases in μCi .

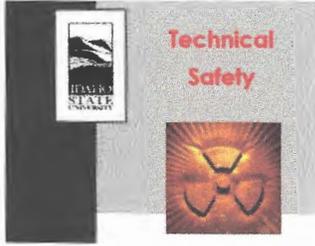
Approval & Filing:

1. When the 100 mrem Report is complete, it should be sent to the RSO for review and approval.
2. Create a file folder with a label in the format of “YEAR 100 MREM.”
3. Place the final approved copy of the 100 mrem Report and its attachments in the folder and file it in the appropriate cabinet of EHS office room 101A.

REFERENCES

10 CFR 20

IDAPA 16.02.27



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REVISION TRACKER

Revision 1	September 1, 2008	Original Procedure
Revision 2	May 10, 2018	Revised Procedure