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SITE ANALYSIS BRANCH POSITION - WINTER PRECIPITATION LOADS

To resolve the inconsistencies among applications in the selection of meteorological conditions and recurrence intervals acceptable as bases for normal and extreme winter precipitation loads, we are establishing the following interim position on winter precipitation loads to be included in the load combinations specified in Section 3.8 of the Standard Review Plan. This interim position will be replaced by a Regulatory Guide on extreme meteorological conditions.

Winter precipitation loads to be included in the combination of normal live loads will be based on the weight of the 100-year snowpack or snowfall, whichever is greater, recorded at ground level.

Winter precipitation loads to be included in the combination of extreme live loads will be based on the addition of the weight of the 100-year snowpack at ground level plus the weight of the 48-hour Probable Maximum Winter Precipitation (PMWP) at ground level for the month corresponding to the selected snowpack. Modifications to this procedure may be necessary for certain areas where it can be satisfactorily demonstrated that the PMWP could neither fall nor remain entirely on top of the antecedent snowpack and/or roofs. These modifications will be reviewed on a case-by-case basis.

Snowpack and snowfall should be adjusted for density differences, and all ground-level values should be adjusted to represent appropriate weights on roofs of safety class structures.

A currently acceptable procedure for establishing base 100-year snowpack and snowfall would be to use Figure 4 in Section 7 of ANSI A58.1 (1972) with suitable adjustments for local conditions based on examination of representative long-term (e.g. 30 years or more) regional data, and a maximization of water content for snow depth information.

Currently acceptable procedures for converting ground-level snowpacks and snowfalls to represent appropriate roof loads are described in ANSI A58.1, although these procedures are currently under review. The 48-hour PMWP may be determined for most areas from the following Hydrometeorological Reports of the U.S. Weather Bureau (now NOAA):



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No. 33., "Seasonal Variation of the Probable Maximum Precipitation East of the 105th Meridian for areas from 10 to 1000 square miles and duration of 6, 12, 24, and 48 hours" (1956).

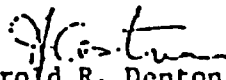
No. 36., "Interim Report, Probable Maximum Precipitation in California" (1961), Revised (1969).

No. 43., "Probable Maximum Precipitation, Northwest States" (1966).

Other references are listed in Section 2.4.3 of the Standard Review Plan.

It appears from the SNUPPS application that the extreme live load combination of the weight of the 100-year snowpack plus the weight of the PMWP, without modifications, will be the controlling load for design purposes. However, there may be some areas, such as the northern tier of states where the PMWP is not large, or in the near-south tier of states where the PMWP must be substantially modified and the attendant snowpack may be relatively small, where the normal load with its multiplier of 1.7 would be controlling for design purposes.

Procedures similar to those described here were submitted on the SNUPPS Docket, and found to be acceptable design bases by the applicant and staff.

  
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