




United States Nuclear Regulatory Commission

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NUREG-1520, Rev. 2

United States Nuclear Regulatory Commission Official Hearing Exhibit	
In the Matter of: CROW BUTTE RESOURCES, INC. (License Renewal for the In Situ Leach Facility, Crawford, Nebraska)	
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# Standard Review Plan for Fuel Cycle Facilities License Applications

Final Report

At some sites, a delineation of the 500-year flood plain may also be available. If the site is above the 500-year flood plain, flooding may be considered an unlikely<sup>2</sup> event, depending on the quality of the estimate. In this category, criticality events should still be prevented, but the breaching of a limited number of material containers may be allowable under the performance requirements (up to 25 rem for the public, up to 100 rem for workers, and a specified release limit) for events that, in terms of likelihood, are between “unlikely” and “highly unlikely.”

In addition to the facility’s location relative to the 100-year or 500-year flood plains, the effects of local intense precipitation and snow load should be considered. Local intense precipitation, especially in the form of snow, can result in roof collapse and localized site flooding. Normally, protection from local precipitation and snow is relatively easy to achieve through roof design and local site drainage design.

### **Wind and Tornado Loading**

Wind design for an existing facility if prescribed by an applicable building code would have an annual exceedance probability of greater than or equal to  $2 \times 10^{-2}$ . At such relatively high probabilities, tornado design criteria are not specified. However, depending on the geographic location of the facility, the effects of a tornado with an annual exceedance probability of  $10^{-5}$  or greater may need to be considered.

Wind forces on walls of structures should be determined using appropriate pressure coefficients, gust factors, and other site-specific adjustments. If the wind is likely to blow inside the structure, either through design or wind-driven missile vulnerability, the effects of wind on internal IROFS requires consideration. If the winds are from a tornado, the effects of the atmospheric pressure change associated with the tornado must be considered. Normally, ventilation systems are most vulnerable to atmospheric pressure change, but windows, buried tanks, and sand filters can also be affected.

For straight winds, hurricanes, and weak tornadoes, missile criteria as specified in Table 3-3 of DOE Standard-1020-2002 may be considered. The missile specified is a 15-pound plank, measuring 2 inches by 4 inches, at a specified elevation and impact velocity. For facilities that may be subjected to more severe tornado missiles, the guidance in Tables 3-4 and 3-5 of DOE Standard-1020-2002 may be followed. For the tornado, a 3,000-pound automobile rolling and tumbling on the ground should also be considered. For such evaluations, the probability of the entire sequence should be considered, and missile criteria from either Table 3-4 or 3-5 of DOE Standard-1020-2002 may be used as appropriate.

### **Considerations for Existing Processes at Existing Facilities**

For existing processes at existing facilities, licensees are not required to address 10 CFR 70.64 baseline design criteria. However, they must still meet the performance requirements of 10 CFR 70.61, including accidents caused by natural phenomena, for which the staff may require additional IROFS to meet the performance requirements. Existing facilities can use IROFS in the form of additional administrative controls to meet the performance requirements

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<sup>2</sup> Even if the licensee defines “unlikely” as less than  $10^{-3}$  per year for the process sequences in the ISA summary, the conservative assumptions inherent in most flood plain hydrologic studies, such as those performed for Federal Emergency Management Agency flood insurance rate maps, should justify the consideration of flooding above the 500-year flood plain as an unlikely event.