

2.2 Requirements for Determination of ABWR Site Acceptability

This section provides the requirements for the determination of ABWR site acceptability. Acceptability is required from the standpoint of both design basis events and severe accident.

2.2.1 Design Basis Events

For design basis events, the site is acceptable if all of the site characteristics fall within the envelope of ABWR Standard Plant site design parameters given in Table 2.0-1. For cases where a characteristic exceeds its envelope, it will be necessary for the COL applicant to submit analyses to demonstrate that the overall set of site characteristics do not exceed the capability of the design. See Subsection 2.3.1 for COL license information requirements.

2.2.2 Severe Accidents

The ABWR PRA results were calculated for an average or typical site, as outlined in Subsection 19E.3. Although these results form a good basis for assessing the general ABWR capability to satisfy offsite dose-related goals, they do not form a basis for concluding that the ABWR would meet dose-related goals at a specific site whose characteristics cannot be defined at the point of ABWR certification. Consistent with the certification concept that all key technical issues be resolved before certification, it is appropriate to define the process for determining future site acceptability. This process is defined below in terms of (1) acceptance criteria, (2) data input, and (3) analysis.

Acceptance Criteria: Site acceptability for severe accidents will be based upon a calculation using an appropriate accident consequence computer code. The results of such a calculation will be compared to the goals of Table 19E.3-7 as shown in Table 2.2-1. The site will be deemed acceptable if the results fall within the given goals.

Data Input: The input to the accident consequence computer code will be a combination of ABWR and site parameters. The accident consequence code input is divided into specific areas. The areas defined in Table 2.2-2 as ABWR will be used as input with their specific data listed in Appendix 2A. The areas defined as GENERAL are also provided in Appendix 2A. The areas defined as UTILITY are to be supplied by the licensing utility and are site specific.

The basic reference case for determining individual and societal risk comparisons (Table 2.2-1) uses a 95/5 evacuation model as shown in Table 19E.3-3. For the determination of dose consequences for comparison to the dose goal shown in Table 2.2-1, no evacuation or shielding factors were assumed. If the results for a specific site using the above assumptions prove unacceptable, then site-specific evacuation and shielding parameters may be substituted in lieu of the reference values in Subgroup Evacuation. However, if the results of such an evaluation for a specific site are unacceptable, site-specific evacuation and shielding parameters may be substituted in lieu of the reference values in Subgroup Evacuation.

Analysis: The analysis for evaluation of a specific site will be accomplished with an appropriate accident consequence computer code. Basic input and code characteristics are described in NUREG/CR-2326 and NUREG/CR-2552.

See Subsection 2.3.3 for COL license information requirements.

Table 2.2-1 Dose-Related Goals

Individual Risk	$<3.9 \times 10^{-7}$ (0.1% of normal risk)
Societal Risk	$<1.7 \times 10^{-6}$ (0.1% of normal risk)
Probability of 0.25 Sv Whole Body Dose at 0.80 km	$<10^{-6}$ per year

Table 2.2-2 Accident Consequence Data Input Listing

Parameter Group	Defined by	Purpose
1. Spatial	ABWR	Site radial mesh
2. Site	ABWR	Meteorological selection
3. Economic	General	Not used but required to run code
4. Population	Utility	Population description
5. Topography	Utility	Topography description
6. Isotope	ABWR	Reactor core Inventory
7. Leakage	ABWR	Release parameters
8. Dispersion	ABWR	Building parameters
9. Evacuation	ABWR	Evacuation modeling
10. Acute	General	Health physics
11. Latent	General	Health physics
12. Chronic	General	Health physics
13. File 20	Not used	Same data as 4 and 5
14. File 21	General	Health physics
15. File 27	Utility	Meteorology data