

Structural/NPH Guidance for Niowave

The primary Nuclear Regulatory Commission (NRC) regulations governing the structural/natural phenomena hazards (NPH) review are:

- 10 CFR 70.61--Performance requirements
- 10 CFR 70.62--Safety program and integrated safety analysis
- 10 CFR 70.64--Requirements for new facilities or new processes at existing facilities

For Title 10 of the *Code of Federal Regulations* (10 CFR) Sections 70.61 and 70.62, the review is concerned with the accident sequences, initiating events, and items relied on for safety (IROFS) that are related to NPH or have a structural nexus. For 10 CFR 70.64, the review is concerned with the baseline design criteria and how they are applied to the structures at the facility.

License applications and integrated safety analyses should consider natural phenomena events (e.g., tornadoes, missile impact, flood, high winds, and earthquakes) and other external events (e.g., aircraft impact) with a sufficient level of detail to characterize and assess the impacts from natural phenomena events and other external events on facility safety. The assessment should identify the licensing assumptions and the design bases for the structures and equipment credited for prevention or mitigation of the consequences to the facility from natural phenomena events and other external events, and the assessment should indicate which events are considered not credible and the basis for that determination.

When structures or structural components are designed to prevent or mitigate the consequences of events (i.e., IROFS), then information is necessary to demonstrate how they were designed to ensure that they will remain functional during/after the NPH event and how their intended function is maintained. This includes, design methodology, design basis values (as applicable to the site based on applicable codes and standards), etc. Compliance with the regulatory requirements to prevent or mitigate the consequences of NPH events may require that facilities be prepared, or possess equipment, that limits the consequences affecting public health and worker radiological and chemical safety in the context of multiple challenges and degraded or disabled emergency resources.

Some guidance documents and examples are provided below.

- The Standard Review Plan in [NUREG-1520](#) Rev 2 contains some guidance on conducting these reviews in Chapter 3, particularly Appendix D to Chapter 3.
- There is also an Interim Staff Guidance (ISG), [FCSS-ISG-15](#), that discuss NPH further. An ISG is an interim guidance document that the NRC plans to incorporate into NUREG-1520.
- Additionally, I can provide some examples of the types of generic questions we have asked at the start of other fuel facility reviews.
 - [Generic Letter 2015-01](#) requested information on NPH from fuel facilities following the Fukushima accident. The Discussion Section, Applicable Regulatory Requirements Section, and Requested Actions Section are examples of the kind of information that is requested for the structural/NPH review and how it relates to the regulations. Note that this Generic Letter would not apply to Niowave, as the letter is from 2015, and the generic issue was closed for all addressees.
 - The January 21, 2022 request for supplemental information for the NFS U-Metal Amendment (Agencywide Documents Access and Management System Accession No. [ML22014A421](#)) contains four requests relating to the structural/NPH review.

These requests are rather fundamental, as opposed to detailed technical issues that are specific to that amendment. The first paragraph of each question provides a discussion of the regulatory basis. That is followed by the information requested and a paragraph with the background, discussion, and justification supporting the request.