

From: [Prasad, Stacy](#)
To: [Andrukat, Dennis](#); [YOUNG, David](#)
Subject: RE: DRAFT pages from NEI 20-05 Rev. E
Date: Thursday, August 19, 2021 9:22:52 PM

Hey,

Mostly. The presentation discussed the following (that are categorized a little differently in the attached):

- achievable target sets included: “results in a release that cannot be mitigated prior to offsite release.”
- achievable target sets result (not could result) in an offsite site dose greater than reference values (i.e. consequence analysis is already performed, if needed, to determine the set is achievable).
- With respect to the flowchart:
 - A and B can be screened without a consequence analysis (Criterion A should determine if the worst case failure of the target set, including a failure by a DBT tactic, is bounded by the safety analysis. Criterion B is that the DBT cannot achieve the target set.)
 - Only C may require a consequence analysis to determine if reference values are exceeded and the target set is achievable... otherwise, Criterion A may not be helpful.
 - Criterion A is really only for those reactors that have inherent physical or chemical characteristics of hazardous material and/or the size of the reactor design is such that a DBT tactic cannot be used create a release that’s outside of the safety analysis.

The table works the way you have it.

The flow chart would have to have “is the criterion met without the need to perform a consequence analysis” to align with what was discussed at the meeting. Also, both boxes for meeting alternative requirements would mean “no achievable target set”.

I’m out until August 30th, but if something is urgent, Dennis can get ahold of me.

Thanks,

Stacy

From: Andrukat, Dennis <Dennis.Andrukat@nrc.gov>
Sent: Thursday, August 19, 2021 4:45 PM
To: YOUNG, David <dly@nei.org>; Prasad, Stacy <stacy.prasad@nrc.gov>
Subject: RE: DRAFT pages from NEI 20-05 Rev. E

Thanks, David.

Stacy – would you mind taking a quick look and letting us know if David is on the right track compared to what we presented on 8/17.

Thanks,
D

From: YOUNG, David <dly@nei.org>
Sent: Thursday, August 19, 2021 4:37 PM
To: Andrukat, Dennis <Dennis.Andrukat@nrc.gov>; Prasad, Stacy <stacy.prasad@nrc.gov>
Subject: [External_Sender] DRAFT pages from NEI 20-05 Rev. E

Dennis,

As discussed, I'm working on the revision to NEI 20-05 (DRAFT Rev. E) to address the comments provided to us during the public meeting on 8/17/21. I've developed the updated flowchart and key text that addresses the development and use of target sets – see attached. Before I revise the rest of the document (to blend these concepts into the other sections), I was hoping I could get a quick review to ensure I've accurately captured the target set information discussed in the meeting.

To be clear – I'm not looking for an "approval" at this time– just that the flowchart and text correctly reflect our meeting discussion. Again, these are DRAFT pages.

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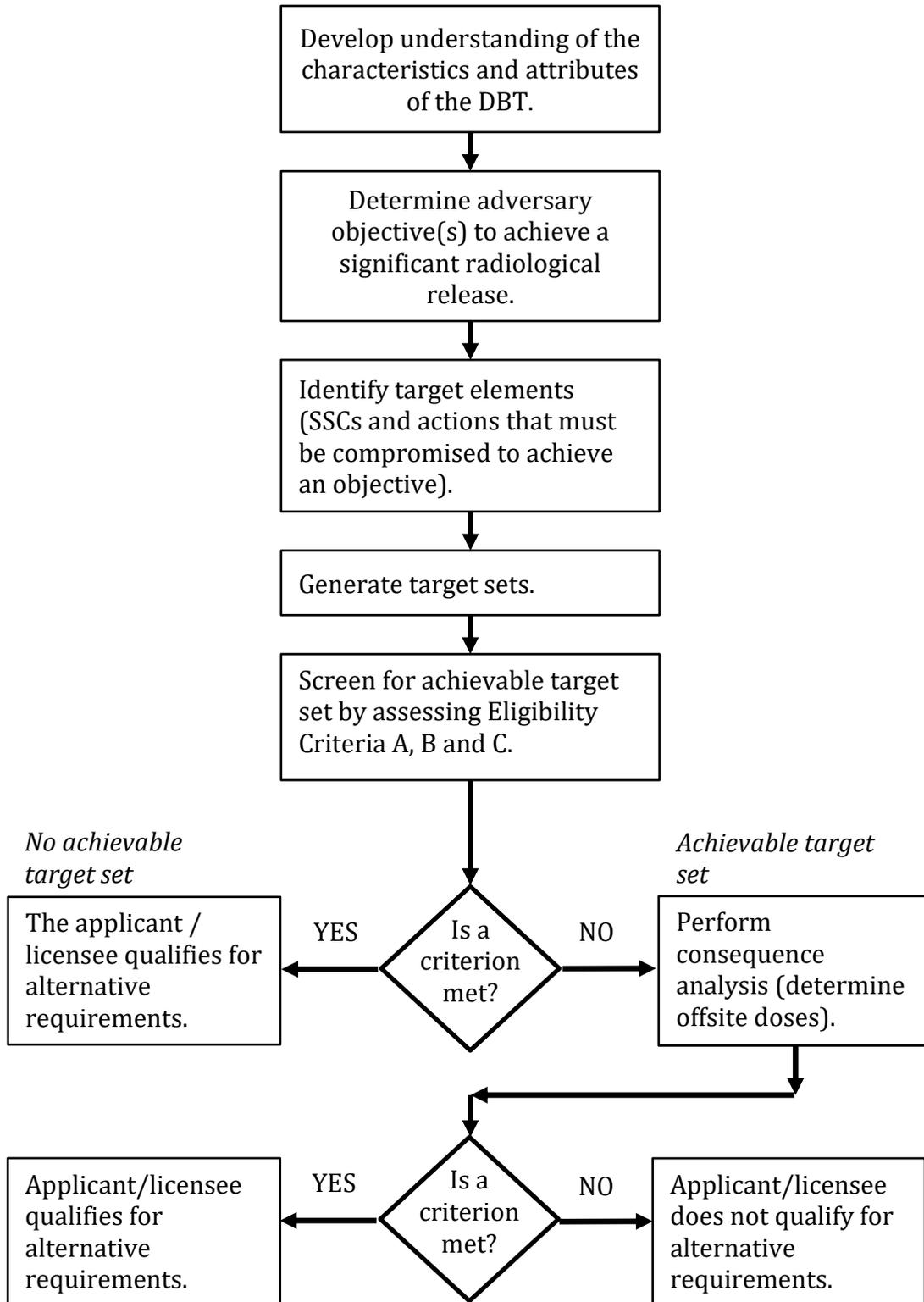


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Methodological Approach and Considerations for a Technical Analysis to Demonstrate Compliance with the Eligibility Criteria of 10 CFR 73.55(a)(7)

Prepared by the Nuclear Energy Institute
September 2021

Figure 1
Overview of a Technical Analysis



1.1 Design Basis Threat

1.2 Target Sets

As used in this document:

- A “target set” is the minimum combination of structures, systems, components, and manual actions, that, if all are prevented from performing their intended safety function or prevented from being accomplished, barring extraordinary actions by plant operations, may result in a significant release of radioactivity to the environment.
- An “achievable target set” is a target set that; (1) can be disrupted, damaged or otherwise made nonfunctional by the design basis threat, and (2) results in offsite consequences that could reasonably be expected to exceed the dose reference values defined in §§ 50.34(a)(1)(ii)(D) and 52.79(a)(1)(vi).

The relationship of a target set and achievable target set to each of the three eligibility criteria presented in § 73.55(a)(7)(i) is shown below.

Eligibility Criterion	Facility Possesses a Target Set?	Can the DBT compromise a Target Set?	Mitigation Measures Exist for Loss of a Target Set?	Could release exceed dose limits?
§ 73.55(a)(7)(i)(A)	Yes	Yes	N/A	No
§ 73.55(a)(7)(i)(B)	Yes	No	N/A	No
§ 73.55(a)(7)(i)(C)	Yes	Yes	Yes	No
Achievable target set	Yes	Yes	Yes or N/A	Yes

The identification of a target set that “may result in a significant release of radioactivity to the environment” should be determined on a qualitative basis or with minimal analysis (e.g., comparing expected source terms or release rates to results from accident and consequence analyses supporting the facility licensing basis). Likewise, the identification of an achievable target set with “offsite consequences that could reasonably be expected to exceed the dose reference values defined in §§ 50.34(a)(1)(ii)(D) and 52.79(a)(1)(vi)” should be determined on a qualitative basis or with minimal analysis. The intent is to screen target sets to identify achievable target sets, and then perform a consequence analysis only for achievable target sets.

Prior to beginning this effort, the applicant or licensee is encouraged to become familiar with the guidance in RG 5.81, “Target Set Identification and Development for Nuclear Power Reactors.” Although RG 5.81 was developed with large LWRs in mind, the discussion on generating target sets, including the use of information and insights from a Probabilistic Risk

Assessment (PRA), can help inform the development of target sets for a non-LWR or SMR facility. Additional guidance on establishing target sets may be found in NEI 13-05, "Target Set Template," and Sandia Report SAND2008-5644, "Vital Area Identification for U.S. Regulatory Nuclear Power Reactor Licensees and New Reactor Applicants," prepared by Sandia National Laboratories.