

NEI 99-02 FAQ 18-01 (Final Approved)  
Definition of Initial Transient

**NOTE**

*This FAQ would implement a whitepaper that proposed clarifications of the definition of "Initial Transient". The whitepaper was discussed with the NRC staff in public ROP meetings in 2013-2014. The final discussion of the whitepaper occurred at a May 14, 2014 public meeting. The NRC staff member who had the lead on performance indicators at the time was Andrew Waugh, who is listed below as the NRC Contact. The concluding discussion is documented in an NRC meeting summary available in ADAMS at accession number ML14149A293. The proposed text changes presented below reflect NRC comments and suggested edits for agency approval presented in a mark-up of the whitepaper attached to the aforementioned meeting summary. The marked-up whitepaper is available under ADAMS accession number ML14149A278.*

**Plant:** Generic  
**Date of Event:** September 11, 2014  
**Submittal Date:** September 11, 2014  
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**Performance Indicator:** IE04 – Unplanned Scrams with Complications  
**Site-Specific FAQ (see Appendix D)?** No – this is generic  
**FAQ to become effective:** When approved

**Question Section:**

**NEI 99-02 Guidance needing interpretation (include page and line citation):**

Page 23 Line 20:

*20 Was pressure control unable to be established following the initial transient?*

Page 24 Lines 39 - 40:

*39 Following initial transient, did stabilization of reactor pressure/level and drywell pressure  
40 meet the entry conditions for EOPs?*

**Event or circumstances requiring guidance interpretation:**

Two of the questions in NEI 99-02 used to determine if a BWR reactor trip was an Unplanned Scram with Complications include the undefined term "initial transient"; "Was pressure control unable to be established following initial transient?" and "Following initial transient did stabilization of reactor pressure/level and drywell pressure meet the entry conditions for EOPs?" The failure to define the term has resulted in confusion, with some licensees interpreting "initial transient" to be equivalent to "scram response".

**If licensee and NRC resident/region do not agree on the facts and circumstances, explain:**

N/A

**Potentially relevant FAQs:** None

**Response Section:**

**Proposed Resolution of FAQ:**

The following is proposed to be added in the Definition of Terms section of this indicator:

*Initial Transient* is intended to envelope the immediate and expected changes to BWR parameters as a result of a scram (e.g., pressure, level, etc.) because of the collapsing of voids in the core and the routine response of the main feedwater and turbine control systems. For example, at some BWRs

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the reflected pressure wave resulting from the rapid closure of turbine valves during a turbine trip may result in a pressure spike in the reactor vessel that causes one or more safety-relief valves (SRVs) to briefly lift. The intent is to allow a licensee to exclude the momentary operation of SRVs when answering "Was pressure control unable to be established?" The sustained or repeated operation of SRVs in response to turbine control bypass valve failures or Main Steam Isolation Valve (Group I) isolations are not a part of routine BWR scram responses and are therefore not considered to occur within the initial transient. Similarly, a reactor level decrease to Level 3 following a reactor trip due to the expected collapsing of voids in the core can be excluded when answering the question "Following initial transient, did stabilization of reactor pressure/level and drywell pressure meet the entry conditions for EOPs?" as long as the feedwater control system and at least one feedwater pump were operating as designed. "Initial transient" is different from "scram response". The initial transient is a subset of the overall scram response time.

**If appropriate, provide proposed rewording of guidance for inclusion in next revision:**  
See above.

**PRA update required to implement this FAQ?** No

**MSPi Basis Document update required to implement this FAQ?** No

**NRC Response:**

NRC agrees with the following language defining initial transient:

*Initial Transient* is intended to envelope the immediate and expected changes to BWR parameters as a result of a scram (e.g., pressure, level, etc.) because of the collapsing of voids in the core and the routine response of the main feedwater and turbine control systems. For example, at some BWRs the reflected pressure wave resulting from the rapid closure of turbine valves during a turbine trip may result in a pressure spike in the reactor vessel that causes one or more safety-relief valves (SRVs) to briefly lift. The intent is to allow a licensee to exclude the momentary operation of SRVs when answering "Was pressure control unable to be established?" The sustained or repeated operation of SRVs in response to turbine control bypass valve failures or Main Steam Isolation Valve (Group I) isolations are not a part of routine BWR scram responses and are therefore not considered to occur within the initial transient. Similarly, an initial reactor level decrease to Level 3 immediately following a reactor trip due to the expected collapsing of voids in the core can be excluded when answering the question "Following initial transient, did stabilization of reactor pressure/level and drywell pressure meet the entry conditions for EOPs?" as long as the feedwater control system and at least one feedwater pump were operating as designed. "Initial transient" is different from "scram response". The initial transient is a subset of the overall scram response time.