

**Proposed Operator Requalification
Human Performance
Significance Determination Process (SDP)**

JUNE 02, 2000

Background:

The attached flowchart and matrix comprise the proposed process for determining the risk significance of issues identified during an inspection of licensed operator requalification program or by a resident inspector's observation of requalification activities. This process covers only those issues related to operator requal. Performance errors made by a licensed operator leading to or during an actual operational event are an integral part of the overall outcome of the event and would be reflected in the outcome of the reactor significance determination process.

This SDP starts when an operator requal issue is identified. It can be related to the programmatic aspects (e.g. exam quality) or to the performance of licensed operators during the annual operating test. This SDP is applicable to all requal issues. Issues related to all licensed operators, including both shift and staff crews, with either active or inactive licenses, are covered by this process. The process is applicable to all license holders since a staff crew could, at any time, be asked to go on-shift and because an inactive license holder needs only to spend the required time on-shift to activate a license.

The SDP Flow Chart:

The parts of the the SDP process related to the written and JPM portions of requal (pages 1 and 2 of the flowchart), address exam quality and security and the performance of multiple individuals. The risk determination assumes that a single individual failure in requal does not rise to the risk significance of a green finding. However, when multiple failures are considered, 20% has been selected as the threshold for acceptable number of failures. This is generally consistent with the guidance in the examination standards of NUREG-1021, Rev. 8. Thus, more than 20% unacceptable written test items is the quality threshold; more than 20% of the operators failing the written portion is the performance threshold; more than 20% of the operators failing the job performance measures (JPMs) is the JPM performance threshold, etc.

The simulator portion of the SDP (pages 3 and 4 of the flowchart) evaluates scenario quality and security and performance of crews. Again, an individual failing in the simulator portion does not rise to the risk significance of a green finding. When crews fail simulator scenarios, it is impossible to determine exactly how long their performance may have been deficient. Therefore, in the absence of specific information, the assumption is that failed crews would have been unable to perform the failed action or activity since the last successful annual operating test. The risk significance of crew performance depends on the percentage of crews that have failed, whether they were remediated before returning to shift, and whether the facility has a green or higher failure rate (as determined by the SDP Simulator Operational Evaluation Matrix) in the previous annual operating test. The risk assessment of operator performance on

the simulator should include all of crews tested even if the inspectors witnessed testing of only some of the crews.

The Simulator Operational Evaluation matrix has been added to the SDP to address multiple crew failures. The “Number of Crews that took the Annual Operating Test” includes multiple units in order to accommodate those instances where operators hold dual unit licenses. If a multiple unit site has separate unit licenses, the matrix should be used to assess the results at each of the units. Once again, to be compatible with NUREG-1021, Rev. 8, an UNSAT requal program is one in which more than 33% of the crews have failed, and is considered a white finding.

Several of the decision blocks on page 4 of the flow chart deserve further explanation.

- “Failure rate green on matrix?” If the failure rate is between 20% and 33% (not an UNSAT program), the concerns are whether or not the crew(s) was remediated before returning to shift and whether or not the failure rate was green or higher on the last annual operating test. Credit is earned for remediation along with a successful annual operating test from last year, while escalation occurs when crews are remediated, but were green or higher on the previous annual operating test. The latter being a potential indication of ineffective corrective actions associated with the failures the previous year.
- “NF on matrix?” This accounts for remediation and last year’s annual operating test results when a <20% failure rate (i.e. no finding) occurs. If there was no remediation or there was remediation but last year’s performance was poor, the ‘no finding’ is escalated to a ‘green finding.’ Otherwise it remains ‘no finding.’ Any other color in the matrix remains that color; no need for further analysis.

Simulator Operational Evaluation

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Number of Crews
with
UNSAT Performance in the
Annual Operating Test

	1	2	3	4	5	6	7	8
4	G	W	Y	R	NA	NA	NA	NA
5	G	W	Y	R	R	NA	NA	NA
6	NF	G	W	Y	R	R	NA	NA
7	NF	G	W	Y	Y	R	R	NA
8	NF	G	W	W	Y	Y	R	R
9	NF	G	G	W	Y	Y	R	R
10	NF	G	G	W	W	Y	Y	R
11	NF	NF	G	W	W	Y	Y	Y
12	NF	NF	G	G	W	W	Y	Y
13	NF	NF	G	G	W	W	W	Y
14	NF	NF	G	G	W	W	W	Y

Number of Crews
that took the
Annual Operating
Test

(Includes Dual Units)

NF = < 20% Failure Rate - No Finding

G = 20 - 33% Failure Rate

W = 34 - 50% Failure Rate (NUREG-1021, Rev 8 - UNSAT Requal Program)

Y = 51 - 75% Failure Rate

R = >75% Failure Rate

NA = Not Applicable