

Appendix I

Licensed Operator Requalification Significance Determination Process (SDP)

Introduction

The attached flowchart is used for determining the risk importance of findings identified during the inspection of licensed operator requalification activities, including licensed operator requalification examinations required by 10 CFR 55.59(a)(2). It is the staff's position that in-plant licensed operator performance can be inferred from their performance on facility-conducted requalification examinations, and that in-plant licensed operator performance affects plant risk. In a fashion analogous to evaluating plant equipment performance, in part, by the surveillance testing of that equipment, licensed operator performance, can, in part, be evaluated by the examinations administered to the operators, provided that the examinations are properly developed and administered by the facility licensee. In addition to licensed operator requalification examination activities, the staff has identified that since a portion of all licensed operator training and examination is conducted on the control room simulator, control room simulator performance and simulator testing could also affect plant risk.

The licensed operator requalification SDP process starts with a single finding (Block #1) identified by regional or resident inspectors during their conduct of Inspection Procedure (IP) 71111.11, "Licensed Operator Requalification Program." It includes findings identified by regional or resident inspectors during the observation of licensed operator requalification examination or training activities, and findings identified during a sample review of documents associated with licensed operators, including the content of examinations and examination results.

In assessing the risk associated with licensed operator requalification findings, the SDP considers: (1) licensed operator performance during examinations, (2) the ability of the facility licensee to properly develop and administer requalification examinations, and (3) other issues, such as the ability of the facility licensee to ensure proper examination security and control room simulator performance. The SDP is constructed to mirror 7 of the 10 inspection requirements contained in IP 71111.11: (1) requalification examination results, (2) biennial requalification written examination quality, (3) annual requalification operating test quality, (4) licensee administration of an annual requalification operating test, (5) requalification examination security, (6) licensee remedial training and re-examinations, and (7) simulator performance. Guidance for assessing conformance with operator license conditions is contained within IP 71111.11 and these issues are typically evaluated using traditional enforcement. Guidance for assessing problem identification and resolution is contained in IP 71111.11, IP 71152, "Problem Identification and Resolution," and IMC 0612.

In regard to licensed operator performance, the primary measure is the collection of examination results each time the facility licensee conducts requalification examinations required by 10 CFR 55.59(a)(2) (i.e., a requalification operating test is required annually, a requalification written examination is required biennially). Any individual

failing an examination is of some concern, however, failure rates less than or equal to 20% are not considered risk significant, and these instances are screened out prior to reaching this SDP. The SDP also assigns an increase in risk if individual or crew failure rates exceed 40%.

In regard to the facility licensee's ability to properly develop and administer requalification examinations, certain overall issues which can be determined objectively, such as the number and type of test items, periodicity of examinations, operating test administration practices, and examination security, are each considered risk significant. However, with respect to the quality of individual test items, where there is a degree of reviewer-based subjectivity, a licensee control band of 20% has been established, such that if less than or equal to 20% of the test items sampled are considered flawed, then these instances will be screened out prior to reaching this SDP. The SDP also assigns an increase in risk if greater than 40% of test items are determined to be flawed.

In regard to other licensed operator requalification issues, such as the medical fitness of licensed operators, and compliance with the regulations contained in 10 CFR 55 and any supporting guidance (i.e., Regulatory Guide 1.134 and ANSI/ANS-3.4), traditional enforcement may result. This is consistent with current and past NRC practice. With respect to simulator performance, compliance with 10 CFR 55.46 and any supporting guidance (i.e., Regulatory Guide 1.149 and ANSI/ANS-3.5) is checked, and risk is assessed based upon several factors, including the impact on operator actions, the effect on operator performance during an in-plant event, or whether the issue was associated solely with simulator testing or maintenance versus simulator fidelity.

Flowchart Block Descriptions:

#1 – The SDP starts after a single licensed operator requalification finding is identified from IP 71111.11 and screened through Manual Chapter 0612, Appendix B. Each specific finding must be evaluated separately.

#2 – This is the top-level entry block associated with licensed operator performance as measured by the results of the requalification examinations required by 10 CFR 55.59(a)(2). This block is answered “yes” or “no” based upon completing the specific guidance contained in section 03.02 of IP 71111.11 and upon completing the screening of inspection issues in accordance with IMC 0612.

#3 – Based upon the requalification examination results collected at the end of the testing cycle, was the failure rate greater than 40%? This block will be answered “yes” if either:

(a) The individual examination failure rate is greater than 40% (IP 71111.11, Line 4 of Table 03.02-1), or

(b) The crew simulator scenario failure rate is greater than 40% (IP 71111.11, Line 7 of Table 03.02-1).

#4 – This is the top-level entry block associated with the quality of biennial requalification written examinations that are required by 10 CFR 55.59(a)(2). This block is answered “yes” or “no” based upon completing the specific guidance contained in section 03.03 and Appendix B of IP 71111.11, and upon completing the screening of inspection issues in accordance with IMC 0612.

#5 – Were greater than 40% of the reviewed written examination questions flawed? In answering this question, the inspector will need to review the results from section 03.03 and Appendix B of IP 71111.11. If the answer to this block is “yes,” then a white finding results, based upon a higher percentage of flawed written examination questions used on a requalification examination required by 10 CFR 55.59(a)(2). If the answer to this block is “no,” then a green finding results, based upon a lower percentage of flawed questions or other written examination deficiency.

#6 – This is the top-level entry block associated with the quality of annual requalification operating tests that are required by 10 CFR 55.59(a)(2). This block is answered “yes” or “no” based upon completing the specific guidance contained in section 03.04 and Appendix C of IP 71111.11, and upon completing the screening of inspection issues in accordance with IMC 0612.

#7 – Were greater than 40% of the reviewed job performance measures (JPMs) flawed? In answering this question, the inspector will need to review the results from section 03.04 and Appendix C of IP 71111.11. If the answer to this block is “yes,” then a white finding results, based upon a higher percentage of flawed JPMs used on a requalification examination required by 10 CFR 55.59(a)(2).

#8 – Were greater than 40% of the reviewed simulator scenarios flawed? In answering this question, the inspector will need to review the results from section 03.04 and Appendix C of IP 71111.11. If the answer to this block is “yes,” then a white finding results, based upon a higher percentage of flawed simulator scenarios used on a requalification examination required by 10 CFR 55.59(a)(2). If the answer to this block is “no,” then a green finding results, based upon a lower percentage of flawed simulator scenarios and JPMs (checked in item #7 above), or based upon some other operating test deficiency.

#9 – This is the top-level entry block associated with the licensee’s administration of annual requalification operating tests that are required by 10 CFR 55.59(a)(2). This block is answered “yes” or “no” based upon completing the specific guidance contained in section 03.05 and Appendix D of IP 71111.11, and upon completing the screening of inspection issues in accordance with IMC 0612.

#10 – This is the top-level entry block associated with requalification examination security. This block is answered “yes” or “no” based upon completing the specific guidance contained in section 03.06 and Appendix E of IP 71111.11, and upon completing the screening of inspection issues in accordance with IMC 0612.

#11 – Was there an actual effect on the equitable and consistent administration of any examination required by 10 CFR 55.59? In these instances, a licensed operator has

gained an unfair advantage on an examination required by 10 CFR 55.59, and this condition was not corrected prior to being authorized to resume licensed duties. These occurrences can be willful or intentional (“cheating”) or unintentional. Under these circumstances, traditional enforcement against 10 CFR 55.59 should be considered, since the regulatory process has likely been impacted. Examples of gaining an unfair advantage on an examination include: (1) a licensed operator obtains unauthorized assistance during an examination, such as by receiving assistance on a test item during an examination from an unauthorized individual or by copying answers from another examinee; (2) a licensed operator obtains specific knowledge of or is exposed to requalification examination content prior to taking the requalification examination; (3) a licensed operator is used to validate requalification examination test items during exam development, and is then subsequently administered a requalification examination with any test items duplicated from those that the operator previously validated.

#12 – This is the top-level entry block associated with remedial training and re-examinations, which occurs whenever a licensed operator fails any portion of a requalification examination required by 10 CFR 55.59(a)(2). This block is answered “yes” or “no” based upon completing the specific guidance contained in section 03.07 and Appendix F of IP 71111.11, and upon completing the screening of inspection issues in accordance with IMC 0612.

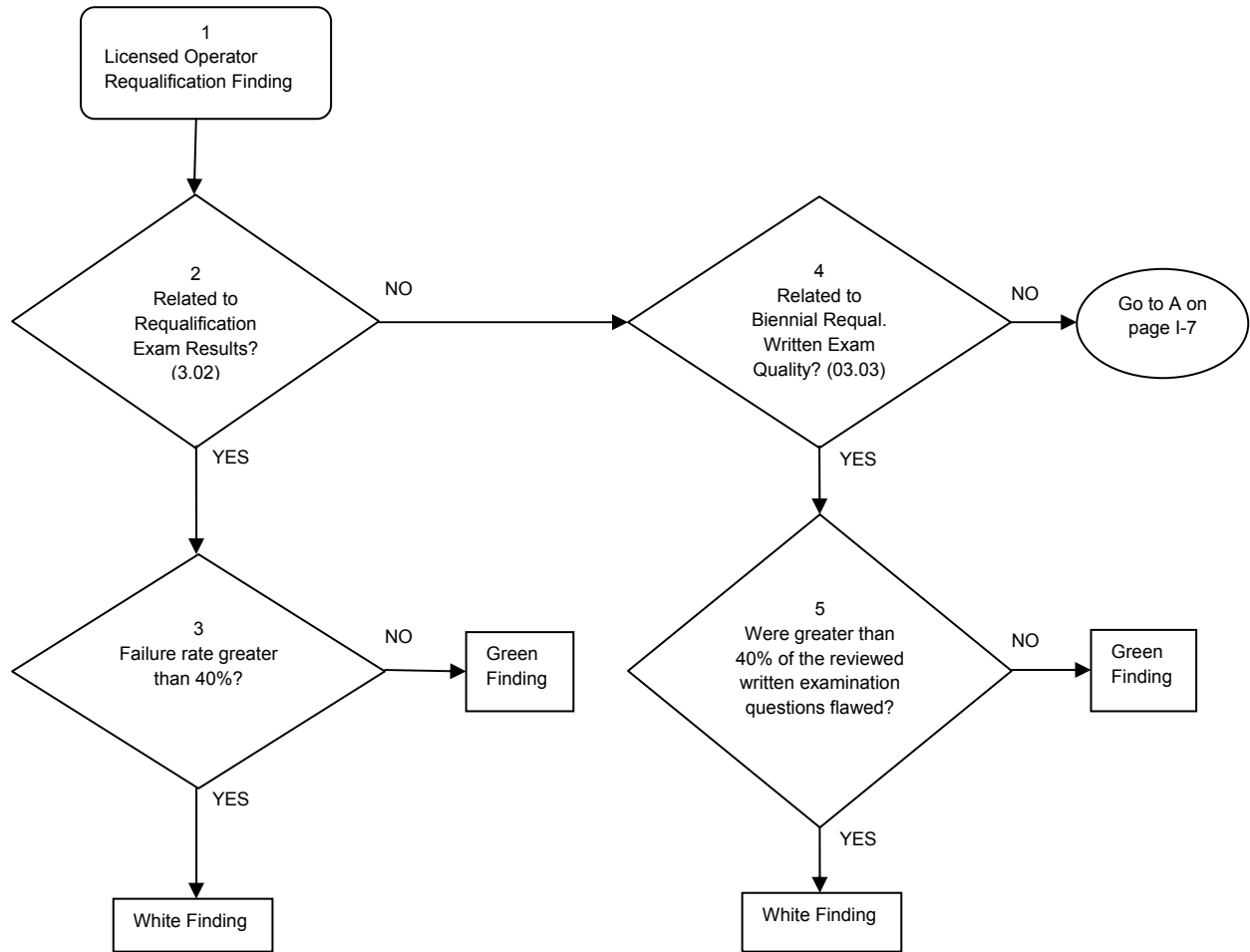
#13 – This is the top-level entry block associated with control room simulator performance, maintenance, and testing, as specified in 10 CFR 55.46. This block is answered “yes” or “no” based upon completing the specific guidance contained in section 03.09 and Appendix G of IP 71111.11, and upon completing the screening of inspection issues in accordance with IMC 0612.

#14 – Was a simulator performance, modeling, or fidelity deficiency identified? This block is used to differentiate between deficiencies associated with simulator performance (including deficiencies with modeling or fidelity) and deficiencies associated with simulator testing, maintenance, and modification. These issues are treated slightly differently in the SDP, due to the potential for unrealistic operator training due to deficient simulator performance. If this block is answered “no”, the deficiency is associated with simulator testing, maintenance, or modification (as verified in the next block), and results in a green finding. If this block is answered “yes”, proceed to block 15.

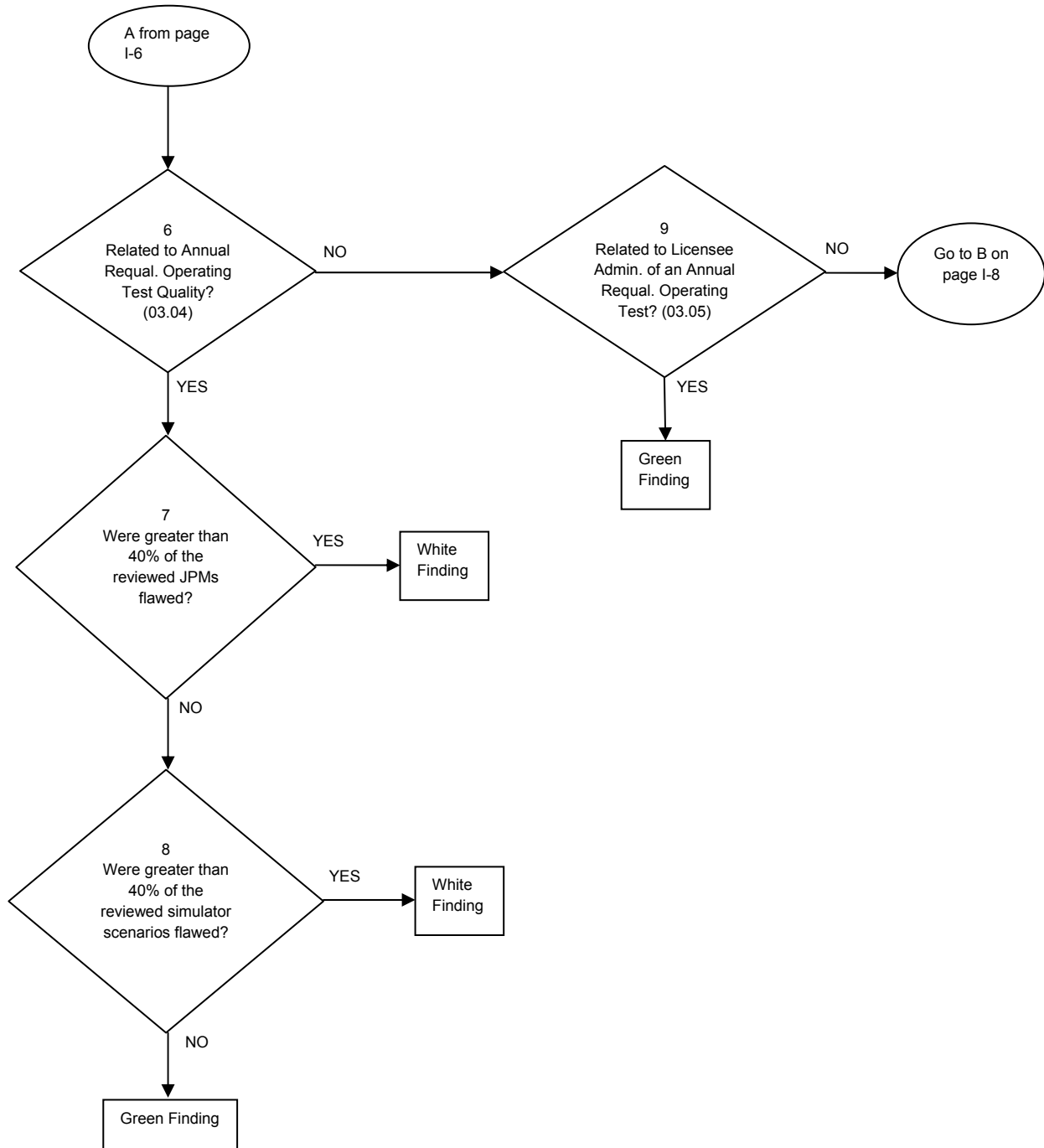
#15 – Did deficient simulator performance, modeling, or fidelity negatively impact operator performance in the actual plant during a reportable event? The concern with this block is that the simulator provided un-realistic or negative training to licensed operators (due to deficiencies in simulator performance, modeling, or fidelity), and that this un-realistic simulator training negatively impacted operator performance during an event that was reportable per 10 CFR 50.72 or 50.73. If the answer to this block is “yes”, then this results in a white finding, based upon deficient simulator performance affecting licensed operator performance during a plant event of NRC concern. If the answer to this block is “no”, then this results in a green finding, since deficient simulator performance was still identified.

#16 – Re-evaluate the finding by entering the SDP at block 1. The SDP is arranged as a *series* of top-level entry blocks, and block #16 should not occur unless all the entry blocks have been answered “NO”. If this is the case, re-evaluate the finding and enter the SDP at block #1, in case an error was made.

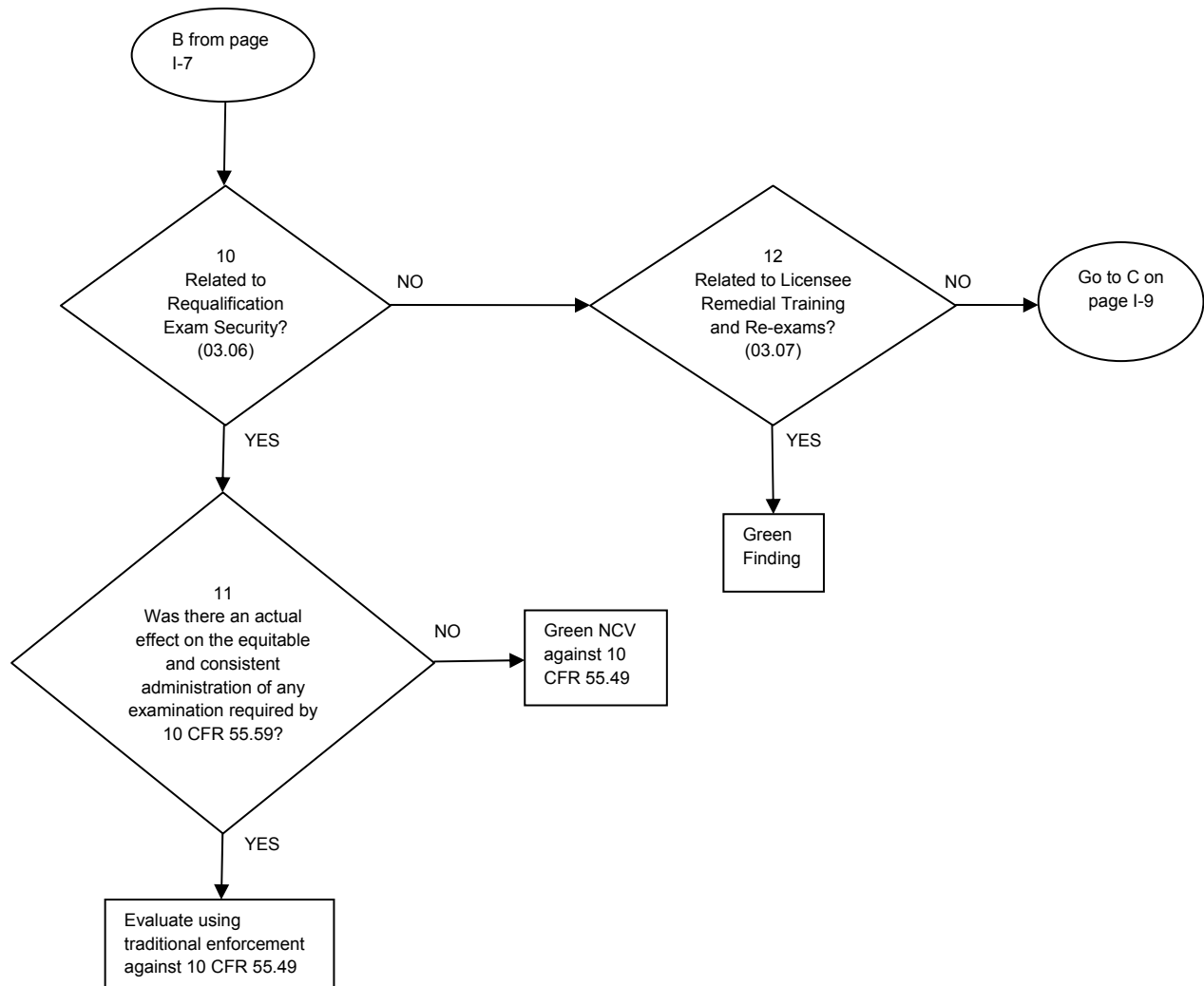
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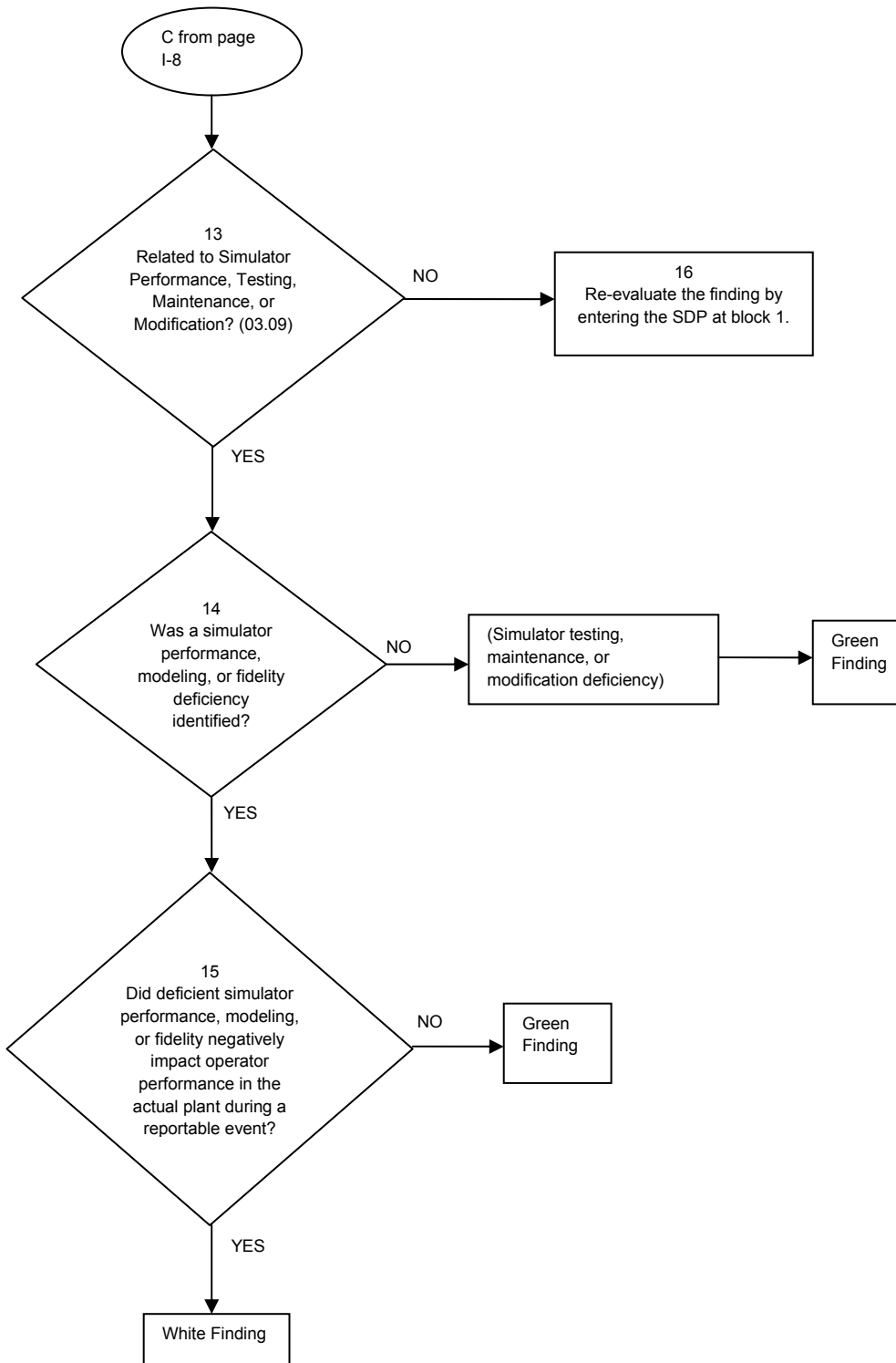
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ATTACHMENT 1 - Revision History – IMC 0609, Appendix I

Commitment Tracking Number	Document Accession Number and Issue Date	Description of Change	Training Needed	Training Completion Date	Comment Resolution Accession Number
N/A	ML021060448 03/27/2002 CN 02-011	Revised the description of the flow chart blocks to: 1) incorporate the first year's lessons learned, 2) reflect the change to 10 CFR 55.46 (Simulator Rule), and 3) align with 10 CFR 55.49 (integrity of examinations and tests).	NO	N/A	N/A
N/A	ML052430099 08/22/2005 CN 05-023	Revised to match current revision to IP 7111.11 (Operator Requalification) and to fix several flaws that have been identified and will enhance the flowchart and matrix.	NO	N/A	N/A
N/A	ML113270313 12/06/11 CN 11-040	Complete re-write of document. Arranged flowchart to mirror inspection areas of revised IP 7111.11, removed all minor finding blocks (minor findings should be screened out prior to reaching the SDP), and simplified examination results logic.	YES	11/30/2011	ML113250576