

**Mendiola, Doris**

**From:** Rana, Raj [RRANA@energy-northwest.com]  
**Sent:** Monday, December 19, 2011 5:07 PM  
**To:** Bedi, Gurjendra  
**Cc:** Edward J Cavey  
**Subject:** FW: NUREG-1482 Rev. 2  
**Attachments:** PGN rev. 2 comments\_351733\_Table format.doc; ATT00001.txt

8/22/2011

76 FR 52355

5

Dear Mr. Bedi:  
Attached is a file of the comments provided to you at the ISTOG meeting.  
Raj Rana

**From:** Clouse, Mark [mailto:mark.clouse@pgnmail.com]  
**Sent:** Tuesday, November 29, 2011 4:16 AM  
**To:** 'Payne, Brian J'; istog@istog.net  
**Subject:** RE: NUREG-1482 Rev. 2

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RULES AND DIRECTIVES  
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**From:** Payne, Brian J [mailto:BJPayne@pplweb.com]  
**Sent:** Tuesday, November 29, 2011 7:06 AM  
**To:** istog@istog.net  
**Subject:** NUREG-1482 Rev. 2

Good morning,

Can anyone please provide me with a copy of the comments ISTOG provided to the NRC concerning the draft of NUREG-1482 Rev.2?

Thank you,

Brian J. Payne  
PPL Susquehanna, LLC  
IST & Check Valve Engineer  
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SUNSI Review Complete  
Template = ADM-013

E-RIDS = ADM-03  
Call = G. Neri (gsb2)

## COMMENTS ON NUREG-1482, REV. 2

Company: Progress Energy

Contact Name: Mark Clouse

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No.	Page	Section	Para.	Comment
1				Throughout the document, apostrophes are missing with the use of possessive cases, e.g., owner s, licensee s.
2	2-1	2.1	2	The statement: <i>"The NRC approves or mandates or both the use of editions..."</i> in the second paragraph should be corrected to state: "The NRC approves or mandates the use of editions..."
3	2-1	2.2	3	Consider a sentence to discuss the nominal revision frequency for RG 1.192
4	4-1	4	1	Utilizes the term <i>"limitations and modifications."</i> I thought the new term was simply "conditions"
5	4-1	4.2	1	<i>"This condition requires that licensees establish a program to ensure that motor-operated valves (MOVs) continue to be capable of performing their design-basis safety functions."</i> However, not all credited MOV design basis testing is capable of detecting a detached obturator for some valve designs (e.g., globe). The terms <i>"limitations and modifications"</i> are used once again, should this be 'conditions'? Suggest that the wording be clear such that all Licensees understand that BOTH the IST and MOV Program scope must match, or otherwise be reconciled.
6	4-2	4.3	1, 2 & 3	In the first paragraph, the document concludes that <i>"the conditions in 10 CFR 50.55a(b)(3)(iv) do not apply to the 2003 Addendum and later editions and addenda to the OM Code because the 2003 Addendum revised the earlier OM Code provisions on which this regulation was based to address the underlying issues that led the NRC to impose the condition."</i> The remainder of the section discusses modifications and limitations that apply to earlier editions of the Code. At first read, it appears that these modifications apply and it is a little confusing. Suggest that a lead in sentence be added prior to the second paragraph to clarify that the following limitations apply to editions and addenda prior to the 2003 addendum.  Also, the NRC needs to provide additional information to clarify or limit the statement that <i>"single direction flow testing of check valves will not always detect degradation of the valve."</i> The example provided appears to reference a standard swing check valve; however, fails to address other check valves to which this statement may not apply and are used throughout the industry. In fact forward flow testing may very well detect a failure in certain valve designs. For example degradation in piston, ball, lift and tilting disc check valves would most likely be detected by inadequate forward flow test results. These valve types would tend to block flow if major failures were to occur.  This section and that of 10CFR50.55a needs to read the same with regards to the 10 year limit for check valve test intervals.

No.	Page	Section	Para.	Comment
7	5-3	5.4	3	<p><i>"The inoperable component could be declared operable once the NRC authorizes the alternative and the licensee has successfully completed the alternative test (if applicable). An NRC authorization of the alternative would not be retroactive because the agency must authorize the alternative before it can be implemented."</i> It is not clear what this last paragraph is referring to. There is no discussion of alternative tests in 5.5.</p>

No.	Page	Section	Para.	Comment
8	5-3	5.9	1	<p>Section 5.9 states that <i>"Licensees should exercise caution when applying interpretations because they are not specifically incorporated by reference into 10 CFR 50.55a and have not received NRC approval. The NRC recognizes that ASME is the official interpreter of the OM Code, but the NRC will not accept ASME interpretations that, in the NRC's opinion, are contrary to the agency's requirements or may adversely impact facility operations."</i></p> <p>This statement seems to contradict the previous discussion in section 2.1 relative to NRC participation with ASME in development of a consensus standard. In fact, this statement implies that the NRC has line item veto authority and cautions users whom implement the ASME interpretations. This document needs to address how the NRC will effectively communicate differences with ASME regarding approved ASME Code interpretations to end users and provide technical justification as to why the opinion formed by industry experts, consultants and vendors differs from that of the commission. For example:</p> <ul style="list-style-type: none"> <li>• Previous attempts to clarify new Code requirements regarding comprehensive pump tests and design flow rate were opposed by the commission and it was not until several years later that a basis was provided. Design flow rate was introduced in the 1995 edition of the OM Code. This term is critical in complying with the comprehensive pump test requirements and has not yet been defined. The industry has proposed several alternatives to the NRC and the NRC was unable to offer an alternative. This leaves the industry vulnerable to Regulatory Interpretation and enforcement. To date, this question remains unanswered in large part because of initial, baseless NRC opposition.</li> <li>• Preconditioning of structures, systems and components became an industry topic during mid 1990s. The NRC issued Information Notice 96-24, "Preconditioning of Molded-Case Circuit Breakers Before Surveillance Testing" and NRC Information Notice 97-16 "Preconditioning of Structures, Systems, and Components." These documents discussed preconditioning on generic basis and addressed longstanding concerns NRC had regarding unacceptable preconditioning of components prior to testing.</li> </ul> <p>In 1998, the NRC issued Part 9900 to Inspection Manual; which discussed staff's perspective with regard to preconditioning of structures, systems, and components. Part 9900 differs significantly from the previous NRC guidance and the industry was not informed until July 2004, when the NRC issued draft NUREG 1482 'Guidelines for Inservice Testing at Nuclear Power Plants', Revision 1.</p> <ul style="list-style-type: none"> <li>• One utility was recently questioned about the allowance in the ASME OM Code relative to performance of an additional valve stroke if the stroke time exceeded the Alert criteria, but was still below the limiting value. The NRC concern relative to unacceptable preconditioning essentially placed the utility in a unique position of defending their legal requirements against the requirements of an NRC Inspection Procedure. In short, they were being asked why they chose follow the Code instead of ignore the requirements to satisfy a potential concern associated with an Inspection Procedure.</li> </ul> <p>In summary, the NRC needs to develop a communication method to immediately notify the industry when the commission opposes the ASME relative to interpretations, or changes their perspective on previous issued guidance related to IST. Holding licensees accountable to Inspection Standards that may conflict with previously published expectations that may not have been adequately communicated to the industry is not consistent with the image of a properly functioning consensus process. This NUREG should consider incorporating guidance based on the concerns identified above.</p>

No.	Page	Section	Para.	Comment
9	5-7	5.11	4	"At that time any published Code Case that has not been annulled, and approved in RG-1.192 may continue to use." This sentence may need to be re-written to improve grammar.
10	6-3	6.5	1	Last sentence in first paragraph may need to be re-written to improve grammar
<b>APPENDIX A</b>				
11	A 2-6	2.2.1	1	Suggest referring to INPO AP-913 as an alternative to the sentence pertaining to "Monitoring the Effectiveness of Maintenance at Nuclear Power Plants (the Maintenance Rule). Licensees may elect to consolidate testing for pumps and valves, designating any non-Code components as such in the IST program". INPO has developed an acceptable approach to 'Critical' and 'Important' classified valves that should be acceptable to the NRC for those components outside of IST but are important to safety.
12	A 2-7	2.2.3	3	
13	A 2-13	2.4.5	4	<p>The first sentence in fourth paragraph implies that testing at cold shutdown is optional. This sentence needs to be corrected. I believe the intent of the sentence is to state that not all CSD components are required to be tested. Also, need to add a consideration that partial stroke testing (of check valves) at a quarterly interval may not be prudent in all cases and may contribute to accelerated wear of critical mating pieces where sufficient flow rates cannot be developed to achieve disc stability. In this condition, the NRC would consider this condition to constitute adequate justification for deferral (to conditions where full flow can be achieved); therefore, a request for relief is not required.</p> <p>The following statement relative to check valve exercise tests is made in 2.4.5 "However, the NRC would continue to require the quarterly partial-stroke testing as applicable. (See also Section 3.1.1)". This section pertains to check valves; which are Category C valves. The partial stroke exercise only applies to Category A &amp; B valves. There is no requirement to perform a partial stroke exercise of a Category C valve.</p>
14	A 2-13	2.4.5	6	A list of bulleted examples is provided with no introduction as to what the bulleted items are intended to satisfy, although it is clear that these items are additional basis for deferred testing.
15	A 2-13	2.4.5	6	The first bullet regarding "inaccessibility" can be explained in more detail. For example, can ALARA and unplanned entry into containment be considered as adequate examples pertaining to inaccessibility? In section 2.5.1(4), it appears as though ALARA can be used to justify a deferral with submittal of a relief request (e.g., it may be a basis for relief <b>OR</b> for deferring a test.). It is unclear if a relief request is needed or if the licensee can follow the intent of the Code and document a basis for deferred testing.
16	A 3-1	3.1	1	Section 3.1 states: "Subsection ISTC of the Code allows licensees to defer valve exercising to cold shutdown or refueling outages if it is not practical to exercise the valves during plant operation. The NRC staff may approve relief to extend a test interval for extenuating circumstances in which (1) compliance would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety, or (2) the system design makes compliance impractical." This paragraph seems to be contradictory, e.g., the Code allows deferral / the staff may approve relief to extend the test interval. Recommend deleting the reference to NRC approval of relief. It is permissible per ASME Code to extend tests to shutdown conditions without NRC approval.

No.	Page	Section	Para.	Comment
17	A 3-3	3.1.1	7	<i>"However, the NRC would continue to require the quarterly partial-stroke testing as applicable. (See also Section 2.4.5)".</i> This section pertains to check valves; which are Category C valves. The partial stroke exercise only applies to Category A & B valves. There is no requirement to perform a partial stroke exercise of a Category C valve.
18	A 3-6	3.1.2	1	3.1.2 - Need to address entry into multiple LCOs or complete removal of an ESF from service.
19	A 3-7	3.1.2	3	<p>Section 3.1.3 – This section continues to refer to the use of grace (25%). The NRC staff at the symposium mentioned a change coming thus not allowing the use of grace.</p> <p>Section 3.1.3 – Paragraph states "The Code specifies performing the tests throughout extended shutdown periods for equipment that must be returned to operable status. Most equipment must be tested before being returned to service after being out-of-service for an extended period in accordance with TS requirements (if applicable). The OM Code provisions in Subsections ISTB-3420 and ISTC-3570 specify that licensees need not follow the test schedule if the system in which the component was installed was declared inoperable or was not required to be operable. <b>However, this applies only if the component was not out-of-service for repair or replacement.</b> For repair or replacement, the component must be tested within 3 months of the system being returned to service."</p> <p>Comment: Need to clarify the intent of this paragraph. It would seem that this paragraph is redundant and overly complicated. Whether a component's testing was discontinued IAW ISTB-3420 or ISTC-3570 OR due to repair / replacement, the end result would be that a test be required within 3 months of the system being returned to service in order for the component (and therefore system) to be considered operational.</p> <p>Section 3.1.3 – "The NRC recommendation for testing during extended shutdown periods is consistent with TS and Code requirements, whichever are more conservative. Responding to inquiry IN 92-025A, the ASME Code Committee stated that Subsection ISTC-3510 intends that testing be conducted <b>every 3 months, including during extended shutdown periods, for valves other than those declared inoperable in accordance with ISTC-3570.</b>"</p> <p>Need to clarify if this paragraph applies to Cold Shutdown frequency tests AND Refuel Frequency tests. In other words, if a valve is tested on a Refuel Frequency, is the expectation to test the valve every 3 months during an extended outage</p>
20	A 3-17	3.5.4	1	The preconditioning discussion needs, particularly as it relates to the venting of pumps needs to acknowledge that the Code requires that instruments be properly vented to ensure accurate test results. The venting of test instruments; therefore, is a Code requirement and should be discussed at this juncture to prevent inadvertent accusations of unacceptable preconditioning in a scenario that does not meet original concept related to masking or grooming component condition. The venting of test instruments does not mask equipment performance; it ensures that the instrument reading is accurate and repeatable as intended by the Code. A simple statement here may help prevent future questions when licensees are simply trying to obtain accurate data.
21	A 3-18	3.6	1	Second sentence structure: "I staff review.." Also, need to address 10CFR50 Appendix J Option A vs. Option B as it relates to preconditioning and ASME OM Code tests for valves taking credit for App J leak rate testing and reference the discussion on this topic in section 4.4.7.

No.	Page	Section	Para.	Comment
22	A 3-19	3.7	2	The second paragraph implies that testing a particular pump may be impractical to test quarterly and be deferred to shutdowns. The remaining discussion is limited to valves; however. Recommend eliminating the term "pump" from this discussion. A pump must be tested quarterly and a deferral is not permitted. This paragraph only applies to valves.
23	A 4-5	4.1.3	1	The following statement is not accurate: <i>"A check valve's full-stroke to the open position may be verified by passing the maximum required accident condition flow through the valve.... Any flow rate less than this is considered a partial-stroke exercise"</i> It is also acceptable to pass the quantity of flow required to perform the specified function. This flow rate may not be the maximum accident flow rate. Suggest aligning the terms to match the Code.
24	A 4-6	4.1.3.3	1	"The phrase "maximum required accident condition flow" is the largest flow rate for which a licensee takes credit in a safety analysis for this component in any flow configuration." Once again, it is acceptable to pass the flow rate required to perform its specified function. This may not be maximum required accident flow. The term ' <i>maximum required accident flow</i> ' is not used in the Code. Suggest aligning the terms to match the Code.
25	A 4-7	4.1.4	2	In the NRC Recommendation for check valve disassembly, the NRC states that <i>"Following reassembly, a partial flow test is expected to be performed."</i> The term "if practical" should be added as it may not be possible to perform a partial flow test following disassembly.
26	A 4-9	4.1.5.1	1	The words "For example, when verifying the closure capability of the check valves on the discharge of parallel pumps, achievement of the required safety flow rate from one running pump with the idle pump's discharge check valve providing the barrier for recirculation flow would be considered an acceptable test configuration" would seem to contradict with CDBI findings that have occurred in the industry. Several CDBIs have insisted that absence of reverse rotation be included whereas others challenge the 'flow' that might be through the idle pump having detrimental effects on pump start.
27	A 4-14	4.1.8	6	The NRC discusses the <i>"classic example of the flawed single-direction testing strategy is that the loss of the disk would not be detected during forward flow tests. The detached disk could be lying at the bottom of the valve body or another part of the system, and could move to block flow or disable another valve or component"</i> . This is a good example, but does not apply to all check valve types; however, the NRC concludes: <i>"testing or examination of the check valve obturator movement to both the open and closed positions necessary to assess its condition and confirm acceptable valve performance."</i> There should be some acknowledgment that both the open and closed tests may NOT be necessary for certain valve designs (lift checks, ball checks, tilting disc). Dependent on the valve type and application, a forward flow test may provide adequate assessment of the working parts of the valve and provide assurance that the valve will properly function when called upon; however, each valve/test must be evaluated individually and relief granted in accordance with 10 CFR 50.55a(a)(3)(i).

No.	Page	Section	Para.	Comment
28	A 4-25	4.2.7	5, 7	<p>In the Basis for Recommendation section, the following statement is made: <i>The staff indicated its interpretation of the Code requirement by stating that for certain types of valves that can be observed locally, but for which valve stem travel does not assure the stem is attached to the disk, the local observation must be supplemented by observing an operating parameter as required in the Code.</i> The use of the term and resultant conclusion are inappropriate. First, the NRC endorses the Code and is not authorized to interpret the Code. Secondly, the statement that <i>the local observation must be supplemented by observing an operating parameter as required in the Code</i> appears to be incorrect. Although the concept is justified, the Code does not make this statement. Supplemental verification is only mandatory where local observation cannot be completed. Lastly, there is no guidance related to measures or positions that may be taken with respect to the frequency of the supplemental test, or the inability to perform a supplemental test. It would be helpful to be able to take credit for other design bases test programs (MOVs) even though the design bases test may not occur at the same two year interval. Based on industry feedback, many plants are equipped with POVs that cannot be reasonably credited or tested using supplemental means. Since this is currently not a Code requirement, some guidance would be helpful in this area.</p> <p>The following statement appears is confusing: <i>"Nuclear power plant operating experience has revealed that reliance on indicating lights and stem travel are not sufficient to satisfy the requirement in ISTC 3700 to verify that valve operation is accurately indicated for those valves where the integrity of the stem-to-disk connection cannot be assured."</i> What type of valves does this condition apply to and what collection of OE supports this conclusion?</p>
29	A 4-26	4.2.8	1	<p>This section implies that passive valves must be tested to verify obturator position, yet passive valves are not subject to additional test requirements. The conclusion in this section essentially states that a passive valve with remote position indication should be tested as an active valve. This position seems to be in conflict with the actual Code requirement; which originally did not require RPI for passive valves. RPI testing of passive valves with remote indication was inserted into the Code; however, no technical basis for this change can be located. Some discussion as to why additional tests are necessary for passive valves simply because they are equipped with remote position indicators should be provided to alleviate confusion relative to the scope of testing that seemingly must be applied.</p>
30	A 4-30	4.3.1	3	<p>Pertaining to thermal relief valves, the NUREG states "If the results of an overpressure protection "re-analysis" for a particular system indicate that a relief valve is not necessary, it may be removed from the scope of the IST program." Some utilities have questioned what constitutes an overpressure protection analysis and whether the analysis may take credit for administrative controls. Specifically, would it be permissible to remove a thermal relief valve from the program if an evaluation concludes that failure of a thermal relief valve to open or close during normal plant operation would not impact an SSC or the associated system and proper controls are taken to eliminate the need for thermal relief when the component is isolated. Essentially, this is an overpressure protection analysis, but incorporates controls to remove the need for thermal protection. It would extremely beneficial if the NUREG stated whether the use of administrative controls is viewed as an acceptable practice in forming a portion of the overpressure protection analysis and if not, clearly state this position to prevent others from using an engineering judgment that the NRC does not endorse.</p>



No.	Page	Section	Para.	Comment
31	A 4-31	4.3.3	3	Most plants have enough data to ascertain the impact of the jack and lap process. Recommend that the use of previous as-found test history for valves that have undergone this process be included to further document the acceptance of this necessary practice.
32	A 4-32	4.4.2	3	The following statement contains a misspelled word (cause): <i>Backseating a valve may also affect its performance (e.g., vause damage to the valve or bind it into its back seat).</i>
33	A 4-36	4.4.4.2	1	There is an extra period at end of sentence.
34	A 5-6	5.3	8	Basis for Recommendation uses the term $\pm 1\%$ of flow rate. The term "reference value" may be more appropriate and recognize that flow rate or differential pressure may be used as the reference point.
35	A 5-10	5.5.2	5	In the Basis for Recommendation there is a very good discussion related to positive displacement pumps and the use of tank level to calculate flow rate; however, the last sentence concludes: "Licensees must submit a relief request to implement this proposed alternative." Subsection ISTB-3510 includes provisions for analytical measurements and the NRC discussion mirrors that of the Code; however, the last sentence implying that a relief request is needed does not appear to be appropriate.
36	A 5-11	5.5.3	1	It may be appropriate to acknowledge that suction source of the equation is typically a very small part of the overall differential pressure determination.
37	A 5-12	5.7	1	The recommendation to operate a Group B pump for a minimum of two minutes seems to contradict the whole premise behind the Group B test; which was to minimize pump run time in less than optimum conditions, recognizing that there were no degradation mechanisms in place for a standby pump. Although a two minute run time is not a problem, it may not be the best advice and should probably be handled on a case by case basis, at a minimum.
38	A 5-13	5.9	5	"In cases where only the minimum-flow return line is available for pump testing, regardless of the test interval, the staff's position is that flow instrumentation that meets the requirements of Subsection ISTB-3500 should be installed in the mini-flow return line." This section goes on to state that flow rate measurement is necessary to monitor pump degradation. This is not true for fixed resistance systems and is only true if the flow rate can be varied in a manner that can mask true system performance. This statement also fails to account for the rationale associated with testing and degradation mechanisms of standby pumps. The NRC position contradicts the ASME OM Code requirement; therefore, the NRC position may constitute a back fit for may older plants.

## APPENDIX B

39	B 1-4	App. B	1.2	The 3 <sup>rd</sup> from the last paragraph has a sentence that states: "Further, Subsection ISTD does not address <u>snubbers in systems required to maintain the integrity of reactor coolant pressure boundary</u> ." This is not true in all editions. The sentence should be clarified as to the editions of the OM Code to which this is applicable.
40	B 2-5	App. B	2.2.1	This section appears to apply mostly for Pumps and Valves (its almost repeat to that in Appendix A). For this Appendix B section on snubbers, is an introductory section to state the plants safe-shutdown condition really required?
41	B 2-7	App. B	2.4.1	7 <sup>th</sup> Bullet – Typo "testis" in first sentence.
42	B 2-7	App. B	2.4.1	8 <sup>th</sup> Bullet – References 10 CFR 50.55a(b)(v), shouldn't this be 50.55a(b)(3)(v)(A)
43	B 2-8	App. B	2.4.2	3 <sup>rd</sup> Bullet – States: "... that "ISI and testing plans..." should be "...IST Plans..."
44	B 2-8	App. B	2.4.2	6 <sup>th</sup> Bullet – States: "...ISTA-9220 states that licensees shall prepare examination, test, replacement, and repair records in accordance..." this should be "...ISTA-9220 states that licensees shall prepare examination and test records in accordance..." (Delete replacement and repair as this is accomplished under ASME Section XI, IWA not OM Code ISTA-9220.)
45	B 2-8	App. B	2.4.2	7 <sup>th</sup> Bullet – This should state "Nonmandatory Appendix A and its supplements..." in lieu of just "Appendix A and its supplements..." [Also see 2.4.6.(b) where "Nonmandatory Appendix-A, and the Supplement to Nonmandatory Appendix-A" is used]
46	B 2-9	App. B	2.4.4.1, Item 6	"Code Case used for visual examination" Should state "If Applicable"
47	B 2-9	App. B	2.4.4.2, Items 5-7	Failure evaluation requirements and methods, Failure Mode Grouping methodologies, and Corrective Actions for each sample plan and FMG identified are too numerous to detail within a Program Plan document. There are hundreds of potential possibilities and combinations to describe, define and provide a basis for.
48	B 2-10	App. B	2.4.4.3	States: "Licensees should use the above guidelines as a minimum and consult with the Snubber User Group (SNUG), when developing guidance for snubber programs and their bases, to help ensure consistency throughout the industry." Suggest removing the <i>consulting with the SNUG when developing guidance for their SLM program and basis</i> , as being in this document will no doubt be interpreted as a requirement that the utility will need to document officially on how they met this.
49	B 2-10	App. B	2.4.5	Snubber identification states: "...in all ISI and testing program documentation..." should be "...snubber IST program documentation..."
50	B 2-11	App. B	2.4.6	1 <sup>st</sup> paragraph states: "...meet the ISI and testing requirements of the..." should delete "ISI and testing", to just state "...meet the requirements of the..."
51	B 2-12	App. B	2.5	Change "ISI and testing" to "examination and testing"
52	B 2-13	App. B	2.6	Change "Snubber ISI and testing..." to "Snubber examination and testing..." in the first and second paragraphs. Also in the first paragraph change the second "ISI" in the first sentence to "NRC"
53	B 2-18	App. B	Figure 1	On the flow diagram, far right column for a TS, TRM or other licensee-controlled program – The very last block which describes the applicable ASME XI or OM Code requirements should be deleted as this flow chart line is for those programs that are in lieu of ASME Sect. XI and/or OM Codes and are have been submitted for review and approval by the NRC. The note is incorrect as well since programs in this flowchart line are submitted for review and approval.