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Subject: Arkansas Nuclear One - Unit 1
Docket No. 50-313
License No. DPR-51
Arkansas Nuclear One - Unit 1 – Comments on Draft Safety Evaluation and Proposed Final Supplemental for all Sections Relating to the Conversion to Improved Technical Specifications (TAC No. MA8082)

Gentlemen:

By letter dated January 28, 2000 (1CAN010007), Entergy Operations submitted a license amendment request to convert the Arkansas Nuclear One - Unit 1 (ANO-1) current Technical Specifications (CTS) to an improved Technical Specification (ITS) format similar to NUREG-1430, "Standard Technical Specifications - Babcock & Wilcox Plants," (STS) Revision 1, dated April 1995. Supplemental letters dated September 28, 2000, February 6, 2001, March 19, 2001, and May 3, 2001 included responses to questions presented by the NRC Staff, with subsequent revisions to the original ITS submittal, along with necessary changes identified by ANO personnel. Several conversations with the Staff and final reviews by ANO personnel have resulted in the desire to make further revisions to the proposed ITS prior to final approval. Additionally, the NRC has drafted and provided for comment the final Safety Evaluation (SE) intended to provide final justification as to the acceptability of the ANO-1 conversion to ITS.

This submittal contains revisions to the proposed ITS based on recent final reviews performed by ANO personnel and based on conversations with the Staff. In addition, comments are offered relating to the draft SE presented by the Staff, including the attached SE Tables. The contents are arranged as follows:

Attachment 1 contains a description of the contents and format of the supplement package. Included in Attachment 1 are discussions related to "relocated" specifications that were previously proposed, but are now being presented as "removed details" and previously proposed "removed details" that are now being presented as "relocated" specifications.

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Attachment 2 delineates those comments identified by ANO personnel through final review and through discussions with the NRC Staff, and the associated resolutions of those comments for all affected ITS Sections.

Attachment 3 contains the revisions to the CTS markups, STS markups, ITS, Discussion of Changes (DOC) and Discussion of Differences (DOD) related to the comment resolutions of Attachment 2. The individual sections are not re-submitted in their entirety. NRC Staff personnel should insert these pages into the latest version of each appropriate section. Further information regarding these replacement pages may be reviewed at the beginning of Attachment 3.

Attachment 4 provides discussions and comments relevant to the draft SE distributed by the NRC.

Attachment 5 contains a markup version proposing final ANO comments on the draft SE Tables. Tables that show no changes are acceptable to ANO as presented.

Sufficient conversation with the NRC Staff has transpired to help ensure the successful review and acceptance of the comments and revisions contained within this supplement. The overall intent of this supplement is to bring to final resolution all outstanding issues regarding the ANO-1 conversion to ITS in preparation for final NRC approval in the near future. For the four specifications discussed in Attachment 1 that are proposed in this supplement as new "relocated" specifications, individual evaluation of 10 CFR 50.36 applicability is included.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on August 23, 2001.

Very truly yours,

CGA/dbb
Attachments

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Format of Supplement Package

This Improved Technical Specification (ITS) supplement package is organized as described below. Due to the limited number of changes, generally only those pages affected are resubmitted. Therefore, changes to the ITS, the Standard Technical Specifications (STS) of NUREG-1430, Revision 1, and the Arkansas Nuclear One – Unit 1 (ANO-1) Current Technical Specifications (CTS) are packaged in a single attachment and ordered by page number to provide quick reference when reviewing comment resolutions. The general ITS writers guide information is not included in this supplement, but may be referenced in previous ANO-1 submittals to the NRC as denoted in the cover letter to this attachment.

Existing ANO-1 License Amendment Requests (LARs) Incorporated in this supplement

One new LAR has been incorporated in this supplement:

1) Renewed Operating License, approved June 20, 2001 (Amendment 213 – Renewed), related to renewal of the ANO-1 Operating License for an additional 20 years of operation.

The following LARs were referenced in our letters dated January 28, 2000 and March 19, 2001, and have been approved as Amendments to the current TS. This submittal updates the reference to these LARs:

1) Amendment 207, approved May 10, 2000, which increased the low reactor coolant pressure actuation setpoint from ≥ 1526 psig to ≥ 1585 psig,

2) Amendment 212, approved March 28, 2001, related to the reroll repair process for upper and lower tubesheets of once-through Steam Generators,

3) Amendment 213, approved March 28, 2001, related to Alternate Repair Criteria for Outer Diameter Intergranular Attack in the tubesheets of once-through Steam Generators, and

4) Amendment 214, approved August 16, 2001, related to the volume requirements and dual-unit use of the Q-CST (Condensate Storage Tank).

Disposition of Generic Changes

No new generic changes are incorporated in this supplement.

List of Beyond Scope Items

No additional Beyond Scope Items, beyond those addressed in our January 28, 2000 and September 28, 2000 submittals are contained in this supplement.

Deleted Proposed Relocated Specifications

As a result of further reviews of the proposed ITS and subsequent conversations with the NRC, six of the previously proposed specification candidates for relocation to other licensee controlled documents are being revised to be referred under "removed details." The draft SE and SE Tables have been revised by the NRC Staff to incorporate five of these six additions to the LA-type SE Tables and subsequent deletion from the R-type SE Table (see Attachment 5). The transfer of the sixth item, related to spent fuel shipping casks, is moved to the L-Type SE Table for Section 3.9 and noted in the comments for the draft SE in Attachment 4, "ANO Comments on Draft Safety Evaluation (SE)." Justifications for these "removal of details" from the specifications and the single "less restrictive" change are provided in new LA-type and L-Type Discussion of Change (DOC) with a brief description of each justification found in the aforementioned SE Table. The new DOCs are referenced in Attachment 2, "Improved TS Review and ANO Comment Resolutions," and may be reviewed in their entirety in Attachment 3, "Revised CTS Markups, STS Markups, DOCs, DODs, and Revised ITS Pages." Because these justifications are discussed in the aforementioned attachments and because they are similar to the justifications proposed for relocation by previous submittal, no further discussion is provided here. The six specifications being revised from "relocated" to "removed details" and "less restrictive" sections of the submittal are as follows:

Section	CTS Number	Description	Discussion
3.1	4.1.b, Table 4.1-3, Item 1.f	RCS boron concentration minimum sample and analysis frequency	3.1 DOC LA2
3.1	4.7.2	Control Rod Program verification requirement	3.1 DOC LA3
3.3	4.1.a, Table 4.1-1 Item 38	Sodium Hydroxide level instrument SR	3.3B DOC LA3
3.7	4.1.b, Table 4.1-3 Item 5.a and Notes 5, 7, and 10	Secondary coolant gross iodine concentration minimum sample and analysis frequency	3.7 DOC LA5
3.7	4.15	Augmented ISI program for high energy lines outside containment	3.7 DOC LA6
3.9	3.8.13	Requirements for Movement of Spent Fuel Shipping Casks	3.9 DOC L9

Conversion of Proposed "Removed Details" to "Relocated" Specifications

As a result of further reviews of the proposed ITS and subsequent conversations with the NRC, four of the previously proposed "removed details" requirements of the CTS are proposed as specification candidates for relocation to other licensee controlled documents.

The draft SE and SE Tables have already been revised by the NRC Staff to illustrate these four additions to the R-type discussions of the draft SE and R-type SE Table and subsequent deletion from the LA-type SE Tables (see Attachments 4 and 5). As is consistent with the original ANO-1 ITS submittal, the following provides a brief description of the selection criteria found in 10 CFR 50.36 and of the four affected specifications. In addition, the ANO comments of Attachment 2 and the revised markups and ITS pages of Attachment 3 reference the conversion of these four items from being "removed details" to being relocated to a licensee controlled document.

SELECTION CRITERIA

Entergy Operations has utilized the selection criteria provided in 10 CFR 50.36 (Effective August 18, 1995) to develop the evaluations of the following proposed specifications for relocation. The selection criteria of 10 CFR 50.36 and discussion provided in 60 FR 36959, July 19, 1995 are quoted below.

Criterion 1: Installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary.

> Discussion of Criterion 1: A basic concept in the adequate protection of the public health and safety is the prevention of accidents. Instrumentation is installed to detect significant abnormal degradation of the reactor coolant pressure boundary so as to allow operator actions to either correct the condition or to shut down the plant safely, thus reducing the likelihood of a loss-of-coolant accident.
>
> This criterion is intended to ensure that Technical Specifications control those instruments specifically installed to detect excessive reactor coolant system leakage. This criterion should not, however, be interpreted to include instrumentation to detect precursors to reactor coolant pressure boundary leakage or instrumentation to identify the source of actual leakage (e.g., loose parts monitor, seismic instrumentation, valve position indicators).

Criterion 2: A process variable, design feature, or operating restriction that is an initial condition of a design basis accident or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

> Discussion of Criterion 2: Another basic concept in the adequate protection of the public health and safety is that the plant shall be operated within the bounds of the initial conditions assumed in the existing design basis accident and transient analyses and that the plant will be operated to preclude unanalyzed transients and accidents. These analyses, which are contained in the SAR, consist of postulated events for which a structure, system or component must meet specified functional goals. They either assume the failure of or present a challenge to the integrity of a fission product barrier.

As used in Criterion 2, process variables are only those parameters for which specific values or ranges of values have been chosen as reference bounds in the design basis accident or transient analyses and which are monitored and controlled during power operation such that process values remain within the analysis bounds. Process variables captured by Criterion 2 are not, however, limited to only those directly monitored from the control room. These could also include other features or characteristics that are specifically assumed in the design basis accident and transient analyses even if they cannot be directly observed in the control room (e.g., moderator temperature coefficient and hot channel factors).

The purpose of this criterion is to capture those process variables that have initial values assumed in the design basis accident and transient analyses, and which are monitored and controlled during power operation. As long as these variables are maintained within the established values, risk to the public safety is presumed to be low.

Criterion 3: A structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a design basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

Discussion of Criterion 3: A third concept in the adequate protection of the public health and safety is that in the event that a postulated design basis accident or transient should occur, structures, systems, and components are available to function or to actuate in order to mitigate the consequence of the design basis accident or transient. Safety sequence analyses or their equivalent have been performed in recent years and provide a method of presenting the plant response to an accident. These can be used to define the primary success paths.

It is the intent of this criterion to capture into Technical Specifications only those structures, systems, and components that are part of the primary success path of a safety sequence analysis. Also captured by this criterion are those support and actuation systems that are necessary for items in the primary success path to successfully function. The primary success path for a particular mode of operation does not include backup and diverse equipment (e.g., rod withdrawal block which is a backup to the average power range monitor high flux trip in the startup mode, safety valves which are backup to low temperature overpressure relief valves during cold shutdown).

Criterion 4: A structure, system, or component which operating experience or probabilistic risk assessment has shown to be significant to public health and safety.

Discussion of Criterion 4: It is the Commission's policy that licensees retain in their Technical Specifications LCOs, action statements, and Surveillance Requirements for the following systems (as applicable), which operating experience and PSA have generally shown to be significant to public health and safety and any other structures, systems, and components that meet this criterion:

- Reactor Coolant Isolation Cooling/Isolation Condenser,
- Residual Heat Removal,
- Standby Liquid Control, and
- Recirculation Pump Trip.

The Commission recognizes that other structures, systems, and components may meet this criterion. Plant- and design-specific PSAs have yielded valuable insight to unique plant vulnerabilities not fully recognized in safety, design basis accident, or transient analyses. It is the intent of this criterion that those requirements that PSA or operating experience exposes as significant to public health and safety, consistent with the Commission's Safety Goal and Severe Accident Policies, be retained or included in the Technical Specifications.

The Commission expects that licensees, in preparing their Technical Specification related submittals, will utilize any plant-specific PSA or risk survey and any available literature on risk insights and PSAs. This material should be employed to strengthen the technical bases for those requirements that remain in Technical Specifications, when applicable, and to verify that none of the requirements to be relocated contain constraints of prime importance in limiting the likelihood or severity of the accident sequences that are commonly found to dominate risk. Similarly, the NRC staff will also employ risk insights and PSAs in evaluating Technical Specifications related submittals. Further, as a part of the Commission's ongoing program of improving Technical Specifications, it will continue to consider methods to make better use of risk and reliability information for defining future generic Technical Specification requirements.

The selection criteria were applied to the following ANO-1 Technical Specifications (TS) as delineated below. No Significant Hazards Considerations (10 CFR 50.92) evaluations for those specifications relocated are also provided. Entergy Operations will relocate those specifications identified below as not satisfying the criteria to ANO-1 licensee controlled documents such as the Safety Analysis Report (SAR) or Technical Requirements Manual (TRM) whose changes are governed by an appropriate regulatory mechanism, such as 10 CFR 50.59.

3.1.1.4 Reactor Internals Vent Valves

LCO Statement:

The structural integrity and operability of the reactor internals vent valves shall be maintained at a level consistent with the acceptance criteria in Specification 4.1. The provisions of Specification 3.0.3 are not applicable.

LCO Related Requirements:

4.1, Table 4.1-2, Item 15

Discussion:

The eight reactor internals vent valves act similarly to check valves, relieving pressure resulting from steam generation within the core to enable rapid reflood of core internals following a cold leg pipe rupture. The valves are passive devices and tested each refueling outage. No indication is available to the operator relevant to the position of the valves and no testing can be performed on these eight valves above Mode 6. The requirement to ensure operability can only be verified by inspection since the operation of these valves cannot be directly monitored during plant operation.

Comparison to Screening Criteria:

Criterion 1

The reactor internals vent valves do not constitute an instrumentation system that is used to detect, and indicate in the control room, a significant degradation of the reactor coolant system (RCS) boundary.

Criterion 2

Reactor internals vent valves are not process variables, design features, or operating restrictions that are an initial condition of a design basis accident or transient analysis that either assumes the failure of or challenge to the integrity of a fission product barrier.

Criterion 3

Although the reactor internals vent valves are designed to open to aid in mitigating the consequences of LOCAs, no indication is available to the operator to determine if they have opened or are functioning correctly. The valves are passive devices and verified to operate correctly by physical inspection in Mode 6. Since no knowledge of valve function can be ascertained during unit operation, the requirement for operability offers no useful role within the specifications. The valves will continue to be required operable by the safety analysis and verified operable when accessible during shutdown conditions at appropriate intervals.

Criterion 4

PSA does not address the reactor internal vent valves. As discussed previously, the operability of these valves may only be verified in Mode 6 and cannot be monitored by operators during plant operation. The valves will continue to be required operable by the safety analysis and verified operable when accessible during shutdown conditions at appropriate intervals.

Conclusion:

The reactor internals vent valves operational and testing requirements do not meet the criteria of 10 CFR 50.36(c)(2)(ii) for retention in the ITS. Therefore, it is acceptable to relocate these specifications to the TRM.

3.1.1.7 Reactor Coolant System Vents

LCO Statement:

At least one reactor coolant system vent path consisting of at least two valves in series shall be operable at each of the following locations whenever the Reactor Coolant average temperature is above 280F.

1. Reactor vessel head
2. Pressurizer steam space
3. Reactor coolant system Hot Leg high point (2 locations)

LCO Related Requirements:

Associated actions included within 3.1.1.7
4.1, Table 4.1-2, Item 16

Discussion:

The reactor coolant pressure boundary is protected by code safety relief valves during normal operation. An electromagnetic relief valve is also available to support this function and to provide low temperature over pressure (LTOP) protection when operating in lower modes. The reactor coolant system (RCS) vents are not designed to support either of these functions, but can be used to aid in the removal of non-condensable gases from high points on the pressurizer, reactor head, and hot leg following a loss of coolant accident (LOCA), or to support establishing a steam bubble in the pressurizer during plant heatup. The RCS vents are used to remove non-condensable gases that might otherwise hinder natural circulation operation of the RCS, but are not relied upon by the ANO-1 safety analysis to ensure the reactor core remains covered with coolant or to ensure radiological releases to the public are maintained within acceptable limits. The vent valves are provided with remote-manual operation, but do not receive an automatic actuation signal. The functioning of the RCS vents is not assumed in the safety analysis, but rather is used to implement non-safety analysis functions.

Comparison to Screening Criteria:

Criterion 1

The RCS vents do not constitute an instrumentation system that is used to detect, and indicate in the control room, a significant degradation of the reactor coolant system (RCS) boundary.

Criterion 2

RCS vent paths are not process variables, design features, or operating restrictions that are an initial condition of a design basis accident or transient analysis that either assumes the failure of or challenge to the integrity of a fission product barrier.

Criterion 3

RCS vent paths are not structures, systems, or components that are part of the primary success path and which function or actuate to mitigate a design basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

Criterion 4

PSA does not address the RCS vent paths. As discussed previously, the functioning of the RCS vents is not assumed in the safety analysis, but rather is used to implement non-safety analysis functions. Failure of one or more of these valves does not result in a significant impact to the health and safety of the public.

Conclusion:

The RCS vent path operability, action and testing requirements do not meet the criteria of 10 CFR 50.36(c)(2)(ii) for retention in the ITS. Therefore, it is acceptable to relocate these specifications to the TRM.

3.1.5 Reactor Coolant System Chemistry

LCO Statement:

The following limits shall not be exceeded for the listed reactor coolant conditions.

Contaminant	Specification	Reactor Coolant Conditions
Oxygen as O_2	0.10 ppm max	above 250°F
Chloride as Cl^-	0.15 ppm max	above cold shutdown conditions
Fluoride as F^-	0.15 ppm max	above cold shutdown conditions

LCO Related Requirements:

Associated Actions of 3.1.5.2, 3.1.5.3, and 3.1.5.4
4.1, Table 4.1-3 Item 1.e, and Table 4.1-3 Note (8)

Discussion:

The current requirements on RCS chemistry help to ensure the integrity of the RCS by limiting oxygen, chloride, and fluoride concentrations. Long-term elevated concentrations of these elements can lead to potential stress corrosion attack of RCS components. However, exceeding these chemical limits do not result in an immediate threat to the integrity of the RCS, nor are these elements considered initiators of any accident previously analyzed. The limits on RCS oxygen, fluoride, and chloride concentrations are not directly pertinent to the safety analysis, but rather describe preventive limits to aid in ensuring the long-term integrity of the RCS.

Comparison to Screening Criteria:

Criterion 1

The restrictions on RCS oxygen, chloride, and fluoride do not constitute an instrumentation system that is used to detect, and indicate in the control room, a significant degradation of the reactor coolant system (RCS) boundary.

Criterion 2

RCS oxygen, chloride, and fluoride limits are not process variables, design features, or operating restrictions that are an initial condition of a design basis accident or transient analysis that either assumes the failure of or challenge to the integrity of a fission product barrier.

Criterion 3

RCS oxygen, chloride, and fluoride limits are not structures, systems, or components that are part of the primary success path and which function or actuate to mitigate a design basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

Criterion 4

PSA does not address the RCS oxygen, chloride, and fluoride limits. As discussed previously, exceeding these chemical limits do not result in an immediate threat to the integrity of the RCS or the health and safety of the public, nor are these elements considered initiators of any accident previously analyzed.

Conclusion:

The RCS oxygen, chloride, and fluoride limits, actions and testing requirements do not meet the criteria of 10 CFR 50.36(c)(2)(ii) for retention in the ITS. Therefore, it is acceptable to relocate these specifications to the TRM.

3.5.1.14 Main Steam Line Radiation Monitoring Instrumentation

LCO Statement:

The Main Steam Line Radiation Monitoring Instrumentation shall be operable with a minimum measurement range from 10^{-1} to 10^{4} mR/hr, whenever the reactor is above the cold shutdown condition.

LCO Related Requirements:

3.5.1.1, Table 3.5.1-1 Functional Unit 17 and Note 30
4.1, Table 4.1-1 item 28c

Discussion:

The main steam line radiation monitors provide a normal operations function of radiological effluent release monitoring and a post accident monitor (PAM) function. The information provided by these monitors is not directly pertinent to the safety analysis, but rather describe equipment used to implement non-safety analysis functions. Other secondary system radiation detection devices are available to the operator such as two sets of N-16 monitors, one of which that can be selected to detect both N-16 gamma or gross gamma radiation, and the condenser offgas monitor. Because the function of the TS-required main steam line monitors is not pertinent to the fulfillment of the safety analysis, they can be moved to a licensee

controlled document without a significant impact on safety. In addition, the PAM function of these instruments is neither Type A nor Category 1. The radiological effluent release monitoring function is relocated to the Offsite Dose Calculation Manual (ODCM) in accordance with Generic Letter 89-01, and the PAM function is relocated to the SAR (with the exception of the requirement to submit a Special Report as discussed in DOC L14 of ITS submittal Section 3.3D).

Comparison to Screening Criteria:

Criterion 1

The main steam line monitors were installed at ANO-1 following issuance of Generic Letter 83-37 as a means to monitor steam release paths through the main steam safety valves or upstream atmospheric dump valves post-accident. The information obtained from these instruments would, in turn, input into the emergency response efforts for offsite protective action recommendations relating to the general public. The requirements for monitor operability and testing were added to the ANO-1 TSs under Amendment 163. However, since they perform a non-safety analysis function and are not required to safely shutdown the reactor, they do not constitute an instrumentation system that is solely relied upon to detect, and indicate in the control room, a significant degradation of the reactor coolant system (RCS) boundary. Subsequently, in accordance with Generic Letter 89-01, the effluent monitoring function of these instruments is proposed for relocation to the ODCM and the PAM function to the ANO-1 SAR. Other instrumentation, as described above, is available to the operator for more accurate monitoring of steam generator tube leakage. Although these monitors can detect steam generator leakage, their function is to support the effluent release monitoring and PAM roles.

Criterion 2

The main steam line radiation monitors are not process variables, design features, or operating restrictions that are an initial condition of a design basis accident or transient analysis that either assumes the failure of or challenge to the integrity of a fission product barrier.

Criterion 3

The main steam line radiation monitors are not structures, systems, or components that are part of the primary success path and which function or actuate to mitigate a design basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

Criterion 4

PSA does not address the main steam line radiation monitors. Loss of these monitors does not result in a threat to the integrity of the RCS or the health and safety of the public, nor are these monitors considered initiators of any accident previously analyzed.

Conclusion:

The main steam line radiation monitors, actions and testing requirements do not meet the criteria of 10 CFR 50.36(c)(2)(ii) for retention in the ITS. Therefore, it is acceptable to relocate these specifications to the ODCM and SAR as discussed above.

Resolution of ANO-1 Initiated Changes

Attachment 2 provides a listing of comments on all ITS Sections identified as a result of conversations with the NRC and final review by ANO personnel. Each comment is immediately followed by a listing of resolutions that are proposed to enhance the ITS prior to final approval by the NRC. The comments and resolutions are listed in order by ITS Section. The proposed resolutions are illustrated in similar order within Attachment 3. Since a significant number of comments do not exist for any specific ITS Section, Attachment 3 is not tabulated to separate the different ITS sections. However, divisions are made such that new ITS pages are separated from DOCs, which are separated from CTS markup pages, etc. Each of these divisions are ordered by page number to enhance quick reference between the proposed comment/revision and the revised pages of ITS, CTS, DOCs, etc. Each comment is assigned a unique identifying number such as "ANO-71." This identifying number also appears in the left hand margin on each page of Attachment 3 that was revised as a result of the comment, with two exceptions. The proposed ITS pages and the proposed ITS Bases pages are not marked to show the comment number in order that they may be viewed as they will appear upon final approval by the NRC. Each comment response details the location of the necessary changes.

Attachment 4 provides discussion relating to ANO comments of the NRCs draft Safety Evaluation (SE) and attached SE Tables. For the most part, SE Table comments are illustrated within the actual tables and are only discussed in Attachment 4 when additional information was considered appropriate. For ease of NRC review of the comments, Attachment 5 provides a copy of the SE Tables, illustrated with markups to provide additional efficiency in the review process.

ATTACHMENT 2

to

1CAN080101

IMPROVED TECHNICAL SPECIFICATION REVIEW

and

ANO COMMENT RESOLUTIONS

Arkansas Nuclear One - Unit 1
Improved TS Review ANO Comment Resolutions

3.1 Reactivity Control Systems

Comment ANO-380
Reference to Mode 2 in DOC M15 should be Mode 3. This is an administrative correction that does not alter the root justification for the change.

Response
Corrected 4th sentence in Section 3.1 DOC M15 to refer to Mode 3 instead of Mode 2. This revision is administrative in nature and does not change the intent or justifications of the original submittal.

Comment ANO-415
CTS 4.1.b
CTS Table 4.1-3, Item 1.f

The RCS boron concentration minimum sampling and analysis frequency in CTS is currently listed as an R-type relocated item in the original ANO ITS submittal. This appears to be a redundant specification to SDM TS requirements and may better meet the criteria of a LA-type change. Consider changing to LA-type change and provide a new DOC with justification for change. Also revise the original ANO submittal showing the deletion of the discussion associated with this parameter. This comment was developed as a result of conversation with Mr. Craig Harbuck of the NRC.

Response
1. The supplemental letter to the NRC accompanying these comments includes discussion of revising the change type of the RCS boron concentration minimum sampling and analysis frequency from "relocated" to "removed details."
2. Added new Section 3.1 LA-Table entry to discuss details of RCS boron concentration sampling and analysis frequency relocation to TRM.
3. Added new Section 3.1 DOC LA2 to discuss details of RCS boron concentration sampling and analysis frequency relocation to TRM.
4. Revised CTS page 74 Table 4.1-3 Item 1.f to reference DOC LA2 instead of being referenced as an R-type change.

3.1 Reactivity Control Systems (continued)

Comment ANO-417

The control rod program verification (group vs core positions) in CTS is currently listed as an R-type relocated item in the original ANO ITS submittal. This appears to be a description of procedural details that describe post-test or post-maintenance verifications of operability and may better meet the criteria of a LA-type change. Consider changing to LA-type change and provide a new DOC with justification for change. Also revise the original ANO submittal showing the deletion of the discussion associated with this parameter. This comment was developed as a result of conversation with Mr. Craig Harbuck of the NRC.

Response

1. The supplemental letter to the NRC accompanying these comments includes discussion of revising the change type of the Control Rod Program Verification from "relocated" to "removed details."
2. Added new Section 3.1 LA-Table entry to discuss details of Control Rod Program Verification relocation to the SAR.
3. Added new Section 3.1 DOC LA3 to discuss details of Control Rod Program Verification relocation to the SAR.
4. Added new CTS page 104 to Section 3.1 to reference DOC LA3 for relocation of the Control Rod Program Verification instead of being referenced as an R-type change.

3.2 Power Distribution Limits

Comment ANO-355

In the ITS Supplement dated February 6, 2001, LCO 3.1.6 Required Action A.1 requires the performance of SR 3.2.5.1. However, the Note associated with SR 3.2.5.1 states that the SR is only required to be performed when required by specific Required Actions. LCO 3.1.6 is not included in this Note. This could result in confusion for the user as to whether the SR is required to be performed or not. Revise the SR 3.2.5.1 Note to include LCO 3.1.6, "Axial Power Shaping Rod (APSR) Alignment Limits". This comment was developed as a result of conversation with Mr. Bob Tjader of the NRC.

Response

1. Revised Section 3.2 DOD 31 to include discussion of SR 3.2.5.1 Note reference to LCO 3.1.6 which incorporated TSTF-220, Rev. 0.
2. Revised Section 3.2 NUREG-1430 SR 3.2.5.1 Note to include reference to LCO 3.1.6.
3. Revised Section 3.2 NUREG-1430 Bases SR 3.2.5.1 to include reference to LCO 3.1.6 (3 places).
4. Revised Section 3.2 ITS SR 3.2.5.1 Note to include reference to LCO 3.1.6.
5. Revised Section 3.2 ITS Bases SR 3.2.5.1 to include reference to LCO 3.1.6 (3 places).

3.3 Instrumentation

Comment ANO-382
3.3A DOC L16

Section 3.3A DOC L16 also incorporates TSTF 286 into 3.3.9 ACTION A. In addition, reference to 3.3.10 Condition A should have been ACTION A.

Response
Revised Section 3.3A DOC L16 to include reference to LCO 3.3.9 ACTION A and changed "Condition" to "ACTION." This is an administrative correction that does not alter the root justification for the change and does not affect the original No Significant Hazards Determination.

Comment ANO-383
3.3A DOCs L12 and L14

Section 3.3A DOCs L12 and L14 should have included the abbreviation "SR" in front of the referenced ITS numbers.

Response
Revised Section 3.3A DOCs L12 and L14 to appropriately reference the applicable SR. This is an administrative correction that does not alter the root justification for the change and does not affect the original No Significant Hazards Determination.

Comment ANO-385
3.3B DOC A13

Amendment 207 was approved on May 10, 2000. Therefore, Section 3.3B DOC A13 may be marked as "not used" and new CTS pages 49 and 50 submitted during next round of ITS comments.

Response
1. Revised Section 3.3B DOC A13 as "not used" since Amendment 207 was approved on May 10, 2000. Printed additional DOC pages to include in the submittal of those pages that changed as a result of spacing changes when DOC A13 was revised.
2. Inserted new CTS pages 49 and 50 as a result of Amendment 207 approval. This is an administrative update only and did not result in any new change to the proposed pages.

3.3 Instrumentation (continued)

Comment ANO-386
Section 3.3D

Incorporate Amendment 205 in CTS Page 39 of Section 3.3D and mark DOC A15 as not used.

Response
The LAR for Amendment 205 was incorporated in the last ANO ITS supplemental dated May 3, 2001. The amendment was related to containment spray system additive which corresponds to ITS Section 3.6. This ITS section was changed in the last supplement. However, CTS page 39 is also found in Section 3.3D with associated LAR DOC A15. Since the previous supplement provided the critical update to Section 3.6 for which the requirements truly apply, the correction here is merely to update Section 3.3D CTS page 39 and DOC A15. This revision or update is administrative in nature and does not change the intent or justifications of the original submittal.

1. Revised Section 3.3D DOC A15 as "not used" since Amendment 205 was approved on March 31, 2000.
2. Inserted new CTS page 39 as a result of Amendment 205 approval. This is an administrative update only and did not result in any new change to the proposed pages.

Comment ANO-390
3.3D DOC LA1

3.3D DOC LA1 table listing "OTHER #18" should refer to "OTHER #14."

Response
Revised Section 3.3D DOC LA1 to refer to Table 3.5.1-1 Other #14 (reference to control room radiation monitoring) instead of Other #18 which does not exist. This revision is administrative in nature and does not change the intent or justifications of the original submittal.

Comment ANO-399
Section 3.3D

The SR should state "allowable values" instead of "setpoint." Reference 3.3.8-02. This comment was developed as a result of conversation with Mr. Craig Harbuck of the NRC.

Response

1. Revised Section 3.3D NUREG 1430 SR 3.3.8.3 on page 3.3-21 to undelete the previously deleted "Allowable Value" wording to provide greater consistency with the STS.
2. Revised Section 3.3D NUREG 1430 Bases 3.3.8 on pages B 3.3-72 and B 3.3-74, including associated Inserts B 3.3-72A and B 3.3-75A to use the term "Allowable Values" in lieu of "setpoints" which is consistent with the STS and ANO setpoint methodologies.
3. Revised Section 3.3D ITS SR 3.3.8.2 on page 3.3.8-2 to include the term "Allowable Value" to be consistent with the STS.
4. Revised Section 3.3D ITS Bases pages B 3.3.8-1 and B 3.3.8.3 to use the term "Allowable Values" in lieu of "setpoints where appropriate to provide consistency with the STS and ANO setpoint methodologies. Re-printed all of Bases 3.3.8 for submittal to NRC due to individual line movements due to the aforementioned revisions.

Comment ANO-408
Section 3.3B

The bases for ITS 3.3.5, 3.3.6, and 3.3.7 omit the discussion of allowable values found in the bases for 3.3.1. This discussion should be included in all the applicable bases. This comment was developed as a result of conversation with Mr. Craig Harbuck of the NRC.

Response

Since 3.3.5 includes a setpoint table, the requested bases information associated with the discussion of allowable values has been added to Bases 3.3.5. However, ITS 3.3.6 and 3.3.7 are only associated with actuation trains and manual actuation switches and do not include setpoints. Therefore, no change to the bases of 3.3.6 and 3.3.7 is included. The addition of this discussion to Bases 3.3.5 is administrative in nature and does not alter the root justification of the previous submittal revisions.

1. Revised Section 3.3B NUREG 1430 Bases pages B 3.3-49 and B 3.3-50 to incorporate the discussion of allowable values found in the Bases for LCO 3.3.1, "RPS Instrumentation." Since this relates to ESAS Instrumentation, minor changes in wording and references have also been incorporated.
2. Revised ITS Bases 3.3.5 pages B 3.3.5-4 and the pages immediately following to accommodate the addition of the aforementioned discussion. This page and the affected pages following are re-printed for submittal to the NRC.

3.3 Instrumentation (continued)

Comment ANO-410

General comment concerning ALL sections of ITS bases. Page formating does not carryover continued subtitles making it difficult to locate sub-sections within the bases. Please consider continuing sub-titles throughout the ITS bases. This comment was developed as a result of conversation with Mr. Craig Harbuck of the NRC.

Response

The changes associated with the suggested comment are not included in this submittal. Prior to ITS approval, a final version of the ITS and ITS Bases will be sent the the NRC. The recommended changes will be considered for submittal at that time.

Comment ANO-411

Section 3.3C

Bases insert 3.3-117B uses the term "channel" instead of "train" in regard to EFIC logic initiation. This is not consistent with the specification which uses the term "train" throughout. This comment was developed as a result of conversation with Mr. Craig Harbuck of the NRC.

Response

1. Revised Section 3.3C STS Bases Insert 3.3-117B 4th sentence to use the term "train" instead of "channel" for consistency.
2. Revised Section 3.3C ITS Bases Background Page B 3.3.13-2 "Vector Valve Enable Logic" to incorporate above change. This revision is administrative in nature and does not change the intent or justifications of the original submittal.

Comment ANO-412
Section 3.3C

Check 3.3 Bases to determine if discussions that are omitted due to being redundant to discussions in other bases provide some reference to the bases that includes the discussion. Consider repeating such discussions in each applicable basis or as another option (less preferred), ensure references are included to alert the user to what bases can be referenced to find discussion of omitted material. This comment was developed as a result of conversation with Mr. Craig Harbuck of the NRC.

Response
Since no information was provided in Bases 3.3.14 Applicable Safety Analysis (ASA), the Vector Logic bases information from Bases 3.3.11 ASA section has been copied to the Bases 3.3.14 ASA. The reference to Bases 3.3.11 ASA is maintained to allow the user to obtain additional information regarding the analysis associated with EFIC initiation logic. Other Section 3.3 Bases were reviewed and found to adequately address the reviewers comments in that information and references are adequately provided for each respective Bases. Therefore, revision is only made to Bases 3.3.14. This addition to Bases 3.3.14 is administrative in nature and does not alter the root justification of the previous submittal revisions.

1. Copied the bases paragraph associated with EFIC Vector Logic in Bases 3.3.11 ASA to Section 3.3C Bases 3.3.14 ASA by creating new NUREG 1430 Bases page B 3.3-124 Insert "B 3.3-124C".
2. Revised Section 3.3C NUREG-1430 page B 3.3-124 reference to Bases 3.3.11 ASA and the addition of Insert B 3.3-124C to the ASA section.
3. Revised Section 3.3C ITS page B 3.3.14-2 to incorporate the additional bases information into ITS Bases 3.3.14 ASA. Re-printed the following page B 3.3.14-3 for submittal since the information on this page was moved to provide space for the additional ASA bases.

3.3 Instrumentation (continued)

Comment ANO-418
Section 3.3D
CTS 4.1.a
CTS Table 4.1-1 Item 38 with Note

The SR associated with the sodium hydroxide tank level instrument in CTS is currently listed as an R-type relocated item in the original ANO ITS submittal. This appears to be an indication-only specification and may better meet the criteria of a LA-type change. Consider changing to LA-type change and provide a new DOC with justification for change. Also revise the original ANO submittal showing the deletion of the discussion associated with this parameter. Include in the new DOC a discussion that NaOH tank level requirements are being retained and only the surveillance requirement for the instrument is being relocated. This comment was developed as a result of conversation with Mr. Craig Harbuck of the NRC.

Response

1. Created new Section 3.3B DOC LA3 to discuss relocation of sodium hydroxide level instrumentation surveillance requirements to the TRM.
2. Created new CTS page 72a to be inserted into Section 3.3B CTS Markup section, deliniating reference to DOC LA3 for Table 4.1-1 Item 38 associated with sodium hydroxide level instrumentation surveillance requirements.

3.3 Instrumentation (continued)

Comment ANO-424
Section 3.3D DOC LA2

Section 3.3D DOC LA2 relevant to the main steam line rad monitor functions does not meet the criteria for an LA-Type change and should be revised as a relocated item. Provide justification for relocating these items to various licensee controlled documents and delete as an LA-type change. This comment was developed as a result of conversation with Mr. Craig Harbuck of the NRC.

Response

1. Provided discussion of justification for relocation of the main steam line monitor requirements to the ODCM and SAR in Attachment 1 of the accompanying supplemental letter to the NRC. Include a discussion of comparison with the criterion of 10 CFR 50.36.
2. Revised Section 3.3D DOC LA2 as being not used since the main steam line monitors are now being proposed as a "relocated" TS item and not a "removal of details" item.
3. Revised CTS page 42b specification 3.5.1.14 to show as an"R"-type change.
4. Revised CTS page 45d1 Table 3.5.1-1 Functional Unit 17 to show as an"R"-type change.
5. Revised CTS page 45h Table 3.5.1-1 Note 30 (applicable portion) to show as an"R"-type change.
6. Revised CTS page 71-1 Table 4.1-1 Item 28c to show as an"R"-type change.

Comment ANO-425
Section 3.3A DOC M10

Section 3.3A DOC M10 does not adequately describe the more restrictive nature of ITS 3.3.10 Condition A with respect to source/intermediate range actions of CTS Table 3.3.5-1 Note 1. In addition, the M10 discussion and CTS markup on page 45e should have also referenced ITS 3.3.9 Condition A. Revise DOC M10 to provide both justification and reference to ITS 3.3.9 Condition A and revise CTS markup page to reference ITS 3.3.9 Condition A. This comment was developed as a result of conversation with Mr. Craig Harbuck of the NRC.

Response

1. Revised Section 3.3A DOC M10 to more accurately describe the more restrictive nature resulting from adoption of ITS 3.3.9 Required Action A3 and ITS 3.3.10 Required Action A2.
2. Revised Section 3.3A CTS page 45e to include reference to adoption of ITS 3.3.9 Condition A.

3.4 Reactor Coolant System

Comment ANO-368
Section 3.4B

The proposed Completion Time for Required Action C.1 has been revised from the 24 hours provided by TSTF-352, Rev.1, to 18 hours. 3.4B DOD-03 does not provide a discussion of this change. Provide a DOD to discuss this change. Also, 3.4B DOC-M2 does not discuss the 3.4.10 Required Action C.1 Completion Time. This comment was developed as a result of conversation with Ms. Kerri Kavanaugh of the NRC.

Response
Section 3.4B CTS DOC M2 addresses the adoption of STS LCO 3.4.10 Required Action C.1 and states that, since the CTS required no actions to reduce temperature to less than LTOP temperature, the adoption of this action is more restrictive. Therefore, no revision is proposed for DOC M2. However, no discussion is provided in Section 3.4B STS DOD 3 or DOD 36 regarding the apparent deviation from the TSTF-approved 24-hour Completion Time to reduce temperature below LTOP temperature to the proposed Completion Time of 18 hours. Therefore, DOD 36 is being revised to include this discussion and the STS page revised to indicate DOD 36 as the correct reference for the 18-hour Completion Time.

1. Revised Section 3.4B STS DOD 36 to discuss why STS LCO 3.4.10 Required Action C.1 Completion Time is 18 hours instead of the 24 hours implied by TSTF-352, Rev. 1. This revision illustrates that the "total" completion time from Mode 1 to a mode of non-applicability remains 24 hours as approved in the TSTF.
2. Revised Section 3.4B STS page 3.4-18 to reference the 18-hour Completion Time of Required Action C.1 to DOD 36.

3.4 Reactor Coolant System (continued)

Comment ANO-369
Section 3.4A

The incorporation of TSTF-286, Rev 2, Insert B4 in the Bases for LCOs 3.4.5, 3.4.6, 3.4.7, and 3.4.8 does not accurately reflect the change as approved by the industry and the NRC. Revise Bases Inserts B3.4-24A, B3.4-28B, B3.4-33A, and B3.4-37B to accurately reflect incorporation of the TSTF. Revise the proposed ITS Bases accordingly. This comment was developed as a result of conversation with Ms. Kerri Kavanaugh of the NRC.

Response

1. Revised Section 3.4A Bases Inserts B3.4-24A, B3.4-28B, B3.4-33A, and B3.4-37B to accurately reflect incorporation of TSTF 286, Rev 2.
2. Revised ITS Bases 3.4.5 on page B 3.4.5-3 ACTIONS C.1 and C.2 to accurately reflect incorporation of TSTF 286, Rev 2.
3. Revised ITS Bases 3.4.6 on page B 3.4.6-3 ACTIONS B.1 and B.2 to accurately reflect incorporation of TSTF 286, Rev 2.
4. Revised ITS Bases 3.4.7 on page B 3.4.7-4 ACTIONS C.1 and C.2 to accurately reflect incorporation of TSTF 286, Rev 2.
5. Revised ITS Bases 3.4.8 on page B 3.4.8-3 ACTIONS B.1, B.2, and B.3 to accurately reflect incorporation of TSTF 286, Rev 2.

3.4 Reactor Coolant System (continued)

Comment ANO-423
Section 3.4A

Section 3.4A DOC L9, L10, LA2, and LA3 relevant to reactor vessel internals vent valves, RCS vent valves, and RCS Chemistry do not meet the criteria for an L- and LA-Type changes and should be revised as a Relocated item. Provide justification for relocating these items to various licensee controlled documents and delete as an LA-type change. Entire specifications should be relocated to the TRM. The licensee may address modifying the required actions when these requirements are not met after they have been moved to the TRM. This comment was developed as a result of conversation with Mr. Craig Harbuck of the NRC.

Response

1. Provided discussion of justification for relocation of the RCS vent valves, reactor vessel internals vent valves, and RCS chemistry requirements to the TRM in Attachment 1 of the accompanying supplemental letter to the NRC. Included a discussion of comparison with the criterion of 10 CFR 50.36.
2. Revised Section 3.4A DOCs L9, L10, LA2, and LA3 as being not used since the above requirements are now being proposed as a "relocated" TS items and not "removal of details" items.
3. Marked the NSHCs for DOCs L9 and L10 as not used accordingly.
4. Revised Section 3.4A CTS page 16 specification 3.1.1.4 to show as an"R"-type change.
5. Revised Section 3.4A CTS page 16b specification 3.1.1.7 to show as an"R"-type change.
6. Revised Section 3.4A CTS page 25 specification 3.1.5 to show as an"R"-type change.
7. Revised Section 3.4A CTS page 73a and 73b Table 4.1-2 Items 15 and 16 to show as an"R"-type change.
8. Revised Section 3.4A CTS page 74 Table 4.1-3 Item 1.e to show as an"R"-type change.
9. Revised Section 3.4A CTS page 75 Table 4.1-3 Note (8) to show as an"R"-type change.

3.4 Reactor Coolant System (continued)

Comment ANO-435
Section 3.4A

The description of the current LAR proposing change to the Q-CST requirements has been revised and supplemented by letter to the NRC dated June 12, 2001 (0CAN060101). This supplement changed the wording of the proposed ANO-1 TS pages and was approved under Amendment 214, dated August 16, 2001. Revised CTS markup with new proposed CTS page 40. Mark DOC A18 as "not used" based upon amendment approval.

Response

1. Marked Section 3.4A DOC A18 as "not used" due to the approval of Amendment 214.
2. Revised Section 3.4A CTS page 40 to show incoporation of Amendment 214. This change revised the amendment number only and is administrative in nature. No technical change of any content or reference on the page was made.
3 Revised Admin SE Table for Section 3.4A accordingly.

Comment ANO-436
Section 3.4A

The CTS markup pages for DOC M5 incorrectly reference ITS 3.4.3 Conditions A and C with Notes and should have referenced ITS 3.4.3 Conditions B and D with Notes. Revise CTS pages 18 and 18a accordingly. This comment was developed as a result of conversation with Mr. Craig Harbuck of the NRC.

Response

1. Revised Section 3.4A CTS page 18 ITS references to the left of specification 3.1.2.6 to correctly reference ITS 3.4.3 Condition D instead of Condition C.
2. Revised Section 3.4A CTS page 18a ITS inserts at the bottom of the page to reference ITS 3.4.3 Conditions B and D instead of Conditions A and C.

3.5 Emergency Core Cooling Systems

Comment ANO-405

3.5 DOC L6 implies the CTS condition for 2 inoperable LPI pumps is 3.0.3. However, CTS 3.3.6 provides the action for this condition. Revise DOC L6 to remedy this difference. The less restrictive nature of the DOC, however, is still applicable even after applying the conditions of CTS 3.3.6.

Also, the Note in Required Action C.2 does not prevent forcing the unit into Mode 5. With 2 LPI pumps inoperable, ACTIONS A, B, and C are applicable. Although C.2 does not require entry to Mode 5 until at least 1 LPI pump is restored, Action B.1 does require entry into Mode 5 regardless of the circumstances. Recommend adding same Note in Required Action C.2 to Required Action B.1.

Response

1. Revised Section 3.5 DOC L6 to remove reference to TS 3.0.3 and to more clearly identify the less restrictive nature of this change (CTS requires Mode 5 entry in all cases, ITS does not). This change does not alter the original No Significant Hazards Determination.
2. Revised Section 3.5 DOD 12 to remove any reference to TS 3.0.3 and to add discussion of adding the Required Action C.2 Note to Required Action B.1 also.
3. Revised Section 3.5 STS 3.5.3 Required Action B.1 on page 3.5-7 to include the same Note that is provided for Required Action C.2.
4. Revised Section 3.5 STS 3.5.3 Bases for Required Action B.1 on page B 3.5-22 to reference a new INSERT B 3.5-22. Created new INSERT B 3.5-22 to discuss the Note added to Required Action B.1 which allows for restoration of at least one LPI pump prior to reducing temperature to Mode 5 conditions.
5. Revised Section 3.5 ITS 3.5.3 Required Action B.1 on page 3.5.3-1 to include the same Note that is provided for Required Action C.2.
6. Revised Section 3.5 ITS 3.5.3 Bases for Required Action B.1 on page B 3.5.3-3 discuss the Note added to Required Action B.1 which allows for restoration of at least on LPI pump prior to reducing temperature to Mode 5 conditions.

3.5 Emergency Core Cooling Systems (continued)

Comment ANO-413

ANO CTS allows 36 hours prior to requiring the unit to be in hot shutdown following a loss of core flood tank (CFT) operability. The STS allows 1 hour to restore, 6 hours to Mode 3 and another 6 hours to reduce RCS pressure below 800 psig (total of 13 hours). ANO has proposed a 6-hour restoration time and then adopts the remaining Mode 3 and pressure statements. Although this is more restrictive than the CTS 36-hour allowance, ANOs 6-hour restoration time proposal is not consistent with the CTS or the STS. The proposal appears to be a generic change.

Adopt the STS 1-hour restoration period or provide justification why ANO should be permitted to deviate from the STS. This comment was developed as a result of conversation with Mr. Craig Harbuck of the NRC.

Response

1. Revised Section 3.5 DOC M2 to incorporate the STS Completion Time of 1 hour to restore CFT operability.
2. Revised Section 3.5 CTS page 38-1 to incorporate STS Completion Time of 1 hour to restore CFT operability.
3. Marked Section 3.5 DOD 1 as not used due to the incorporation of the STS Completion Time of 1 hour to restore CFT operability.
4. Revised Section 3.5 STS 3.5.1 ACTION B Completion time on page 3.5-1 to incorporate the STS Completion Time of 1 hour to restore CFT operability.
5. Revised Section 3.5 STS 3.5.1 ACTION B Bases on page B 3.5-6 to incorporate the STS Completion Time of 1 hour to restore CFT operability.
6. Revised Section 3.5 ITS 3.5.1 ACTION B Completion Time on page B 3.5.1-1 to incorporate the STS Completion Time of 1 hour to restore CFT operability.
7. Revised Section 3.5 ITS 3.5.1 ACTION B Bases on page B 3.5.1-5 to incorporate the STS Completion Time of 1 hour to restore CFT operability.
8. Modified Section 3.5 SE Table "More Restrictive" DOC M2 to incorporate the STS Completion Time of 1 hour to restore CFT operability.

Comment ANO-432

Incorporate Amendment 205 (approved March 31, 2000) into Section 3.5 CTS pages 37 and 39.

Response

The LAR for Amendment 205 was incorporated in the last ANO ITS supplemental dated May 3, 2001. The amendment was related to containment spray system additive which corresponds to ITS Section 3.6. This ITS section was changed in the last supplement. However, CTS pages 37 and 39 are also found in Section 3.5 with associated LAR DOC A13. Since the previous supplement provided the critical update to Section 3.6 for which the requirements truly apply, the correction here is merely to update Section 3.5 CTS page 39 and DOC A15. This revision or update is administrative in nature and does not change the intent or justifications of the original submittal.

1. Marked Section 3.5 DOC A13 as "not used."
2. Revised Section 3.7 CTS pages 37 and 39 to show incorporation of new amendment.

3.6 Reactor Building Systems

Comment ANO-360

The ANO response to Comment 3.6.3-11 adequately addressed opening non-automatic valves under administrative controls. However, the justifications did not address the application of opening, under administrative controls, automatic valves that have been deactivated. This comment was developed as a result of conversation with Mr. Bob Giardina of the NRC.

Response

1. Created new Section 3.6 DOC L25 to discuss the less restrictive nature of opening deactivated-closed automatic reactor building isolation valves under administrative controls as allowed by the STS.
2. Created new NSHC to support addition of DOC L25.
3. Revised Section 3.6 CTS 1.7.c on page 5 and CTS 3.6.6 on page 55 to add reference to DOC L25.
4. Revised Section 3.6 SE Table "Less Restrictive Changes" to incorporate new L-DOC above.

3.6 Reactor Building Systems (continued)

Comment ANO-361

The ANO response to Comment 3.6.3-12 incorporated Note 4 into ITS 3.6.3 as requested by the Reviewer. However, the associated Bases were not retained and should have been. This comment was developed as a result of conversation with Mr. Bob Giardina of the NRC.

Response

1. Revised Section 3.6 STS 3.6.3 Bases on pages B 3.6-18 and 3.6-19 to "undelete" the paragraph referring to ACTIONS Note 4.
2. Revised Section 3.6 ITS 3.6.3 Bases on page B 3.6.3-4 accordingly. Re-printed page B 3.6.3-3 following format adjustments made to provide additional space for the aforementioned revision.

Comment ANO-444

Section 3.6 DOC A16 should be shown as a less restrictive change. The CTS did not exempt locked, sealed, or otherwise secured valves from functional testing.

Response

1. Marked Section 3.6 DOC A16 as not used.
2. Created new Section 3.6 DOC-L26 to discuss less restrictive nature of not testing locked, sealed, or otherwise secured valves in accordance with NUREG-1430, Rev. 1.
3. Created new NSHC to support new DOC L26.
4. Updated Section 3.6 Less-Restrictive SE Table to include DOC L26.

Comment ANO-445

Round 1 RAI 3.6.5-7 response was adequate except that it did not revise the CTS markup page 95 for CTS 4.5.2.1.1.a to show this detail being removed to the bases. In addition, DOC LA1 does not mention this move.

Revise DOC LA1 and CTS page 95 to show reference to details of CTS 4.5.2.1.1.a being removed to the bases. This comment was developed as a result of discussion with Mr. Bob Giardina of the NRC.

Response

1. Revised Section 3.6 CTS DOC LA1 to include CTS 4.5.2.1.1(a).
2. Revised Section 3.6 CTS 4.5.2.1.1(a) on page 95 to reference DOC LA1.

3.7 Plant Systems

Comment ANO-387

Much of NUREG 1430 Bases 3.7.2 Applicable Safety Analysis was omitted. This level of detail should be included in the bases. This is a duplicate comment from Round 1 (RAI 3.7-24). This comment was developed as a result of conversation with Ms. Kerri Kavanaugh of the NRC.

Response

1. Revised Section 3.7 ASA Bases 3.7.2 on STS pages B 3.7-7, B 3.7-8, and B 3.7-9 to provide additional information regarding the role of the MSIVs in the safety analysis.
2. Created new Section 3.7 STS INSERT B 3.7-7B and revised INSERT B 3.7-9A to provide additional information regarding the role of the MSIVs in the safety analysis.
3. Revised Section 3.7 ITS Bases 3.7.2 ASA on pages B 3.7.2-1 and B 3.7.2-2 accordingly. Re-printed entire bases due to movement of bases sections required when inserting additional bases discussion above.

Comment ANO-388

CTS 3.4.1 DOC L23
ITS 3.7.3

CTS 3.4.1 references DOC L23 which does not exist. In addition, ITS 3.7.3 does not match the CTS 3.4.1 markup.

Comment: Provide justification for CTS 3.4.1 changes and revise ITS 3.7.3 to reflect CTS 3.4.1 markup. This comment was developed as a result of conversation with Ms. Kerri Kavanaugh of the NRC.

Response

A review of all associated changes (CTS, STS, ITS, DOCs, DODs) indicate that the current proposed ITS Applicability of Modes 1, 2, and 3 is correct (see Section 3.7 DOD-3). Revising the CTS as suggested on page 40-3 (see reference to DOC L23) would be redundant to required actions of the ITS which requires inoperable valves to be closed within a limited period of time. Therefore, the current proposed ITS is retained and the CTS page is revised accordingly.

1. Revised Section 3.7 CTS 3.4.1 on page 40-3 to indicate an applicability of Modes 1, 2, and 3 concerning the operability of main feedwater valves.
2. Revised Section 3.7 CTS 3.4.1.5 on page 40-3 to more accurately reflect the wording of ITS LCO 3.7.3.

3.7 Plant Systems (continued)

Comment ANO-395

3.7 DOC M7 should state time to non-applicable mode is reduced from 72 hours to 12 hours instead of 18 hours.

Response

1. Revised Section 3.7 DOC M7 to state that the time from Mode 3 to Mode 4 has been reduced from 72 hours to 12 hours.
2. Revised Section 3.7 SE Table - More Restrictive, DOC M7, to state that the time from Mode 3 to Mode 4 has been reduced from 72 hours to 12 hours.

Comment ANO-416

CTS 4.1.b

CTS Table 4.1-3 Item 5.a with Notes 5, 7, and 10

The secondary coolant gross radioiodine concentration minimum sampling and analysis frequency in CTS is currently listed as an R-type relocated item in the original ANO ITS submittal. This appears to be a redundant or related specification to other secondary radioactivity TS requirements and may better meet the criteria of a LA-type change. Consider changing to LA-type change and provide a new DOC with justification for change. Also revise the original ANO submittal showing the deletion of the discussion associated with this parameter. This comment was developed as a result of conversation with Mr. Craig Harbuck of the NRC.

Response

1. The supplemental letter to the NRC accompanying these comments includes discussion of revising the change type of the secondary coolant radioiodine concentration determination from "relocated" to "removed details."
2. Created new Section 3.7 DOC LA5 to discuss the removed details of the secondary gross radioiodine concentration determination requirement to the TRM.
3. Revised Section 3.7 CTS Table 4.1-3 Item 5.a and associated Notes 5, 7, and 10 on CTS pages 74 and 75 to reference DOC LA5 instead of being referenced as a R-type change.

3.7 Plant Systems (continued)

Comment ANO-419

The augmented ISI program for high energy lines outside of containment in CTS is currently listed as an R-type relocated item in the original ANO ITS submittal. This appears to be a description of performance requirements to ensure continued component operability and may better meet the criteria of a LA-type change. Consider changing to LA-type change and provide a new DOC with justification for change. Also revise the original ANO submittal showing the deletion of the discussion associated with this parameter. This comment was developed as a result of conversation with Mr. Craig Harbuck of the NRC.

Response

1. The supplemental letter to the NRC accompanying these comments includes discussion of revising the change type of the augmented ISI program inspection for high energy lines outside of containment from "relocated" to "removed details."
2. Created new Section 3.7 DOC LA6 to discuss the removed details of the augmented ISI program inspection for high energy lines outside of containment requirement to the ISI program.
3. Added new Section 3.7 CTS 4.15 pages 110c and 110d to indicate the removal of these details to the ISI program.

Comment ANO-420

The description of the current LAR proposing change to the Q-CST requirements has been revised and supplemented by letter to the NRC dated June 12, 2001 (0CAN060101). This supplement changed the wording of the proposed ANO-1 TS pages. Revised CTS markup with new proposed CTS pages 40 and 41a. Amendment 214 was approved on August 16, 2001.

Response

1. Marked Section 3.7 DOC A14 as "not used" due to the approval of Amendment 214.
2. Revised Section 3.7 CTS pages 40-1, 2, 3, 4, and 5 and page 41a to show incoporation of Amendment 214. This change is administrative in nature.
3. Revised Section 3.7 STS SR 3.7.6.1 on page 3.7-16 to show incorporation of Amendment 214.
4. Revised Section 3.7 STS 3.7.6 Bases INSERTs B 3.7-33A and B 3.7-33B to incorporate new bases of Amendment 214.
5. Added additional bases discussion regarding the required CST water volumes to Section 3.7 STS SR 3.7.6.1 Bases as a result of Amendment 214.
6. Revised Section 3.7 ITS SR 3.7.6.1 on page 3.7.6-1 to incorporate new volume requirements of Amendment 214.
7. Revised Section 3.7 ITS 3.7.6 Bases ASA, LCO, and SR 3.7.6.1 on pages B 3.7.6-1, B 3.7.6-2, and B 3.7.6-3 to include bases change discussions resulting from Amendment 214.

3.7 Plant Systems (continued)

Comment ANO-427

3.7 DOC L4 2nd paragraph incorrectly references "MSIV" instead of "MFIV". Correct accordingly.

Response

Changed Section 3.7 DOC L4 2nd paragraph acronym "MSIV" to "MFIV." This change does not alter the original No Significant Hazard Determination.

Comment ANO-446

Section 3.7 DOC LA3 incorrectly states that the details of CTS 4.5.1.1.2(b) and 4.11.5 are moved to the TRM although they are moved to the ANO-1 SAR as shown in Section 3.5 DOC LA3. Correct DOC LA3 and CTS pages 92 and 109 in Section 3.7.

Response

1. Revised Section 3.7 DOC LA3 to indicate the movement of CTS 4.5.1.1.2(b) and 4.11.5 details to the SAR.
2. Revised Section 3.7 CTS pages 92 and 109 to reference the SAR.
3. Updated Section 3.7 LA-type SE Table "Removed Details" accordingly.

3.8 Electrical Power Systems

Comment ANO-391

3.8 DOC A7 was deleted by RAI 3.8.1-25, but still shows up on CTS page 100. Delete A7 from page 100 and add reference to RAI 3.8.1-25.

Response

Revised Section 3.8 CTS page 100 to delete reference to DOC A7 and include reference to RAI 3.8.1-25.

Comment ANO-393

3.8 DOC LA2 should reference 10 CFR 50.65 (Maintenance Rule) instead of 10 CFR 50.63 (Station Blackout)

Response

Revised Section 3.8 DOC LA2 to reference 10 CFR 50.65 instead of 10 CR 50.63.

3.8 Electrical Power Systems (continued)

Comment ANO-394

3.8 DOC LA3 instead of LA1 should be referenced to CTS 4.6.1.3 on CTS page 100.

Response

Revised Section 3.8 CTS 4.6.1.3 on page 100 to correctly reference DOC LA3 instead of DOC LA1.

Comment ANO-429

SR 3.8.4.2 regarding the 18 month battery test is inadvertanly mislabeled SR 3.8.4.1 on ITS page 3.8.4-1.

Response

Revised Section 3.8 ITS 18-month battery capacity test on page 3.8.4-1 to be referenced as SR 3.8.4.2 instead of SR 3.8.4.1.

Comment ANO-437

No justification for not complying with the 15-second start time for the EDG has been provided. Although it is not required by analsis for Modes 5 and 6, what is justification for not meeting this requirement (special surveillance test, etc.)? The bases on page B 3.8.2-7 also mentions not requiring the 15-second start criteria. This comment was developed as a result of conversation with Mr. Ed Tomlinson of the NRC.

Response

1. Revised Section 3.8 STS Bases 3.8.2 INSERT B 3.8-40B to include discussion that the exemption from the 15-second criteria is necessary to support using the AAC DG as a power source in lieu of an emergency DG.
2. Revised Section 3.8 ITS Bases SR 3.8.2.1 last paragraph on page B 3.8.2-7 by adding 2nd sentence and modifying the last sentence to incorporate basis for exempting the 15-second start from DG tests in Modes 5 and 6.

3.8 Electrical Power Systems (continued)

Comment ANO-438

Some components in the proposed list in LCO 3.8.10 requires more than one operable AC or DC bus. This is in conflict with LCOs 3.8.5 and 3.8.8. Recommend revising LCOs 3.8.5 and 3.8.8 to include the phrase "except as required by LCO 3.8.10" or some equivalent. This is a human factors concern. This comment was developed as a result of conversation with Mr. Ed Tomlinson of the NRC.

Response

Affected STS, ITS, and Bases pages have been revised. However, the Bases for LCO 3.8.8 did not require revision to incorporate this change. DOD-56 also still applies as written and requires no further revision

1. Revised Section 3.8 STS LCO 3.8.5 on page 3.8-30 to adopt the STS LCO wording.
2. Revised Section 3.8 STS 3.8.5 Condition A wording to be consistent with the STS.
3. Revised Section 3.8 STS LCO Bases 3.8.5 on page B 3.8-60 to match the intent of the above changes to STS LCO 3.8.5.
4. Revised Section 3.8 STS LCO 3.8.8 on page 3.8-38 to adopt the STS LCO wording.
5. Revised Section 3.8 STS 3.8.8 Condition A wording to be consistent with the STS.
6. Revised Section 3.8 STS LCO and Applicability Bases 3.8.8 on page B 3.8-76 to match the intent of the above changes to STS LCO 3.8.8.
7. Revised Section 3.8 ITS LCO 3.8.5 on page 3.8.5-1 to adopt the STS wording.
8. Revised Section 3.8 ITS 3.8.5 Condition A wording to be consistent with the STS.
9. Revised Section 3.8 ITS LCO 3.8.8 on page 3.8.8-1 to adopt the STS wording.
10. Revised Section 3.8 ITS 3.8.8 Condition A wording to be consistent with the STS.
11. Revised Section 3.8 ITS 3.8.5 Bases LCO on page 3.8.5-2 to be more consistent with the STS.
12. Revised Section 3.8 ITS 3.8.8 Bases LCO and Applicability on page 3.8.8-2 to be more consistent with the STS.

3.8 Electrical Power Systems (continued)

Comment ANO-440

The sentence refering to the NUMARC states that the "industry" has adopted this. Consider changing "industry" to "ANO-1" or equivalent. This also applies to pages B 3.8.5-1 and B 3.8.8-2. This comment was developed as a result of conversation with Mr. Ed Tomlinson of the NRC.

Response

1. Revised Section 3.8 STS Bases 3.8.2, 3.8.5, and 3.8.8 INSERTS B 3.8-36A, B 3.8-60A, and B 3.8-75A to state that ANO, through industry commitment, has adopted NUMARC 91-06.
2. Revised Section 3.8 ITS Bases 3.8.2 on page B 3.8.2-3 accordingly.
3. Revised Section 3.8 ITS Bases 3.8.5 on page B 3.8.5-1 accordingly.
4. Revised Section 3.8 ITS Bases 3.8.8 on page B 3.8.8-2 accordingly.

Comment ANO-441

The response to round one comments RAI 3.8.1-04 and 3.8.1-11 did not adequately discuss the limitations of the offsite power transformers (what buses they can be connected to, etc.). Please provide further discussion in the applicable bases. This comment was developed as a result of conversation with Mr. Ed Tomlinson of the NRC.

Response

1. Revised Section 3.8 STS Bases 3.8.1 INSERT B 3.8-3A to clarify and adequately describe the offsite power arrangement at ANO-1.
2. Revised Section 3.8 ITS LCO Bases 3.8.1 on pages B 3.8.1-3 and B 3.8.1-4 accordingly.

3.8 Electrical Power Systems (continued)

Comment ANO-442

Round one comment ANO-295 attempted to revise the restoration period for an inoperable inverter from the STS 24-hour allowance to 72 hours. Even though a generic change has been submitted on this subject, it has not been reviewed or approved by the NRC to date. Recommend revising the applicable specifications to be consistent with the 24-hour restoration period provided by the STS. This comment was developed as a result of conversation with Mr. Ed Tomlinson of the NRC.

Response

1. Revised Section 3.8 DOD 65 to discuss unique 120 VAC distribution system at ANO and to incorporate discussion of inverter Y28 and panel C540. Modified discussion to adopt 24-hour STS Completion Time for vital inverters, but propose a 72-hour Completion Time for Y28.
2. Revised Section 3.8 STS 3.8.7 LCO, LCO Note, ACTIONS and SR on pages 3.8-36 and 3.8-37 to adopt the 24-hour STS Completion Time for vital inverters, to more accurately describe the 120 VAC inverter requirements, and include the adoption of requirements for inverter Y28.
3. Revised Section 3.8 STS Bases 3.8.7 on pages B 3.8-71 through B 3.8-74 including INSERT B 3.8-71B and created new Bases INSERT B 3.8-73A to adopt the 24-hour STS Completion Time for vital inverters, to more accurately describe the 120 VAC inverter requirements, and include the adoption of requirements for inverter Y28.
4. Revised Section 3.8 STS 3.8.9 LCO, Condition B, and SR, and added new ACTION C on pages 3.8-40 and 3.8-41 to include the adoption of requirements for bus C540.
5. Revised Section 3.8 STS 3.8.9 Bases on pages B 3.8-79, B 3.8-80, B 3.8-81, and B 3.8-83 through B 3.8-88, and created new INSERT B 3.8-84A to include the adoption of requirements for bus C540.
6. Revised Section 3.8 ITS 3.8.7 LCO, LCO Note, ACTIONS and SR on pages 3.8.7-1 and 3.8.7-2 to adopt the 24-hour STS Completion Time for vital inverters, to more accurately describe the 120 VAC inverter requirements, and include the adoption of requirements for inverter Y28.
7. Revised Section 3.8 ITS Bases 3.8.7 on pages B 3.8.7-1 through 3.8.7-4 and to adopt the 24-hour STS Completion Time for vital inverters, to more accurately describe the 120 VAC inverter requirements, and include the adoption of requirements for inverter Y28.
8. Revised Section 3.8 ITS 3.8.9 LCO, Condition B, and SR, and added new ACTION C on pages 3.8.9-1 and 3.8.9-2 to include the adoption of requirements for bus C540.
9. Revised Section 3.8 ITS 3.8.9 Bases on pages B 3.8.9-1, B 3.8.9-2, B 3.8.9-4, B 3.8.9-5, B 3.8.9-7, and B 3.8.9-8 to include the adoption of requirements for bus C540. Re-printed all of 3.8.9 Bases for submittal due to page number changes.

3.9 Refueling Operations

Comment ANO-443
CTS 3.8.13 on page 59

CTS requirements regarding the shipment of fuel to offsite facilities is currently addressed under a relocated R-Type change. The bases to remove this specification from the TSs justifies deleting the specification in its entirety. Therefore, consider revising this change from being a R-Type change to being a "L-Type" less restrictive change and incorporate new 3.9 L-DOC to justify deletion of the specification. This comment was developed as a result of conversation with Mr. Craig Harbuck of the NRC.

Response

1. Created new Section 3.9 CTS DOC L9 to discuss the less restrictive nature of deleting this specification.
2 Created new NSHC to support new DOC L9.
3. Revised Section 3.9 CTS 3.8.13 on page 59 to reference new DOC L9.
4. Revised Section 3.9 L-Type SE Table to incorporate new DOC L9 summation.

Comment ANO-447
CTS 3.8.13 on page 59

Section 3.9 DOC LA1 incorrectly indicates that the "continuous indication" function of the source range detectors is moved to the TRM. This information has been moved to ITS 3.9.2 Bases, Background.

Response

1. Revised Section 3.9 DOC LA1 to show CTS 3.8.2 details of "continuous indication" for source range flux monitoring moved to the Bases for ITS 3.9.2.
2 Revised Section 3.9 CTS Markup page 58 to reference CTS 3.8.2 to the Bases.
3. Revised Section 3.9 "Removed Details" LA-type SE Table accordingly.

Comment ANO-449
LCO 3.9.4 Note in Section 3.9 should refer to LCO 3.9.1 instead of LCO 3.1.1.

Response

1. Revised Section 3.9 ITS LCO 3.9.4 Note to reference LCO 3.9.1.

4.0 Design Features

Comment ANO-422

DOC A2 is used throughout STS Section 4.0 and 5.0 even though these sections contain no bases. In next supplement, include a short discussion that this DOC was not necessary for Sections 4.0 and 5.0 and therefore the associated Administrative Tables have been updated to show DOC A2 as not applicable. This comment was developed as a result of conversation with Mr. Craig Harbuck of the NRC.

Response

1. Revised Section 4.0 and Section 5.0 CTS DOCs A2 to discuss that these sections contain no bases, however, the CTS markup pages are annotated to indicate that the illustrated bases are incorporated into the appropriate ITS sections.
2. Revised Section 4.0 and Section 5.0 Admin-type SE Tables DOCs A2 accordingly.

Comment ANO-448

Section 4.0 DOC LA1 incorrectly moves details of CTS 5.3.1.6 and a portion of CTS 5.4.1.1 to the TRM. This information was moved to the SAR. Correct DOC LA1 accordingly.

Response

1. Revised Section 4.0 DOC LA1 to show the appropriate SAR sections where details of CTS 5.3.1.6 and 5.4.1.1 were moved.
2. Revised Section 4.0 CTS markup page 116 accordingly.
3. Revised Section 4.0 "Removed Details" LA-type SE Table accordingly.

5.0 Administrative Controls

Comment ANO-392

Title of 5.5.10 should be indented and underlined.

Response

Indented and underlined title for Secondary Water Chemistry on ITS Page 5.0-20.

5.0 Administrative Controls (continued)

Comment ANO-401
Reference to DOC A13 at bottom of CTS page 66c should be A3.

Response
Revised Section 5.0 CTS page 66C insert at the bottom of the page to reference DOC A3 instead of DOC A13.

Comment ANO-402
Incorporate Amendment 213 to CTS page 110j1. Incorporate Amendments 212 and 213 to CTS page 110m. Incorporate Amendment 212 to CTS page 110n. Reference DOCs A18 and A19.

Response

1. Marked Section 5.0 CTS DOCs A18 and A19 as not used.
2. Revised Section 5.0 CTS pages 110j1, 110m, and 110n to incorporate Amendments 212 and 213. No technical revisions were made to these pages, nor does this change result in a change to the proposed ITS.
3. Revised Section 5.0 Admin-type SE Table to show DOCs A18 and A19 as not used.

Comment ANO-426
Three operating license conditions have been proposed for incorporation into ITS Section 5.5, Programs and Manuals. The CTS markup implies 5.0 DOC A1 as appropriate justification for this change. Request that a new A-DOC being developed to discuss this change since change is associated with license conditions and not the CTS. This comment was developed as a result of conversation with Mr. Craig Harbuck of the NRC.

Response

1. Created new Section 5.0 DOC A20 to discuss placing license conditions associated with Systems Integrity, Iodine Monitoring, and Secondary Water Chemistry in ITS Section 5.5.
2. Revised CTS Operating License pages 4 and 5 to incorporate renewed Operating License issued on June 20, 2001 and to reference Section 5.0 DOC A20 for Systems Integrity, Iodine Monitoring, and Secondary Water Chemistry.
3. Revised Section 5.0 Admin-type SE Table to include new DOC A20.

ATTACHMENT 3

to

1CAN080101

Revised

CTS Markups, STS Markups, DOCs, DODs,

and

Revised ITS Pages

INDEX

The following list provides a reference index for the revised CTS, STS, and ITS pages of this attachment. Please use this reference as a guide when removing out-of-date pages from your latest package, and inserting the revised pages of this attachment. Note that section numbers are located in the bottom left corner of DOCs and DODs, and in the upper right corner of CTS markup pages. The comment number may also be referenced with Attachment 2 if further detail is required. STS and ITS sections may be derived by the page numbers at the bottom of each page.

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Discussions of Changes (DOCs)

CTS DISCUSSION OF CHANGES

ITS Section 3.1: Reactivity Control Systems

ADMINISTRATIVE

A1 The designated change represents a non-technical, non-intent change to the Arkansas Nuclear One, Unit 1 Current Technical Specifications (CTS) made to make the ANO-1 Improved Technical Specifications (ITS) consistent with the Babcock and Wilcox (B&W) revised Standard Technical Specification (RSTS), NUREG-1430, Revision 1. This change does not alter the requirements of the CTS or RSTS. Examples of this type of change include: wording preference; convention adoption; editorial, numbering and formatting changes; and hierarchy structure.

A2 The CTS Bases will be administratively deleted in their entirety in favor of the NUREG-1430 Bases. The CTS Bases will be reviewed for technical content that will be identified for retention in the ITS Bases.

A3 The CTS 4.7.1.2 defined rod misalignment as being a deviation from the group average position of more than nine (9) inches. For consistency with the plant instrumentation and NUREG-1430, 6.5% will be used to establish CONTROL ROD and APSR misalignment in the ITS. ITS Bases B 3.1.4 includes reference to the fact that 9 inches and 6.5% are considered equivalent. This is consistent with NUREG-1430.

A4 Not used.

A5 The second statement of CTS 3.5.2.5.1 provides an exception to the requirement that all safety rods be fully withdrawn as stated in CTS 3.1.3.5. This allowance relaxes the requirement to shutdown, per CTS 3.1.3.7, when a safety rod is not fully withdrawn, provided the rod is inoperable per CTS 3.5.2.2. Through the adoption of ITS 3.1.5 and its associated ACTIONS, this allowance for continued operation of the unit with an inoperable and not fully withdrawn safety rod will be maintained. Although it is represented in a significantly different format, the requirements of CTS 3.5.2.5.1 are maintained by the requirements of the ITS. Due to the continuation of essentially equivalent requirements, this change is administrative in nature. This change is consistent with NUREG-1430.

A6 The requirement that a CONTROL ROD which cannot be exercised be declared inoperable, which is presented in the first statement in CTS 4.7.1.3, is maintained in the ITS through the requirements of ITS SR 3.1.4.2, CONTROL ROD freedom of movement verification, and the application of ITS SR 3.0.1. Although no specific ITS item is cross-referenced to this CTS item, the requirement is embodied in the structure and requirements of ITS Specifications 3.1.4 and 3.1.5, and the application of SR 3.0.1. The lack of a direct cross-reference represents no actual change in requirements and is administrative in nature.

A7 CTS 3.1.3.1 establishes the minimum temperature for criticality of 525°F except during low power physics testing when the requirements of CTS 3.1.8.3 shall apply. CTS 3.1.3.2 and CTS 3.1.8.3 establish a minimum temperature for criticality in accordance with the criticality curves provided on CTS Figure 3.1.2-2. CTS 3.1.3.2 and CTS 3.1.8.3 implicitly duplicate the requirements of CTS 3.1.2, "Pressurization, Heatup and Cooldown Limitations," which has an implied Applicability of "at all times." Because of the duplicative nature of CTS 3.1.3.2 and CTS 3.1.8.3, they have been administratively deleted. This is acceptable because these minimum temperature requirements will exist in ITS LCO 3.4.3, "RCS Pressure and Temperature (P/T) Limits." ITS 3.4.3 will have Applicability "at all times" and is not excepted by the Physics Testing exceptions provided by LCO 3.1.8, "PHYSICS TEST Exceptions - MODE 1." and LCO 3.1.9, "PHYSICS TEST Exceptions - MODE 2." Therefore, this minimum temperature for criticality requirement will continue to exist in the ITS.

A8 The intent of CTS 3.1.8.1.A and 3.1.8.1.B is to ensure that, during Low Power Physics Testing, all Reactor Protection System (RPS) Setpoints are maintained per the requirements of the RPS setpoints section of CTS (Table 2.3-1) with the exception of the nuclear overpower trip setpoint which shall be less than 5 percent. The distinction of specifying the requirements separately below 1720 psig and above 1800 psig is made to ensure that the requirements are clearly applicable whether RPS is in Shutdown Bypass (<1720 psig), or out of Shutdown Bypass (>1800 psig). The requirement to maintain the nuclear overpower trip setpoint at less than 5 percent is specified only when above 1800 psig because the Shutdown Bypass nuclear overpower trip setpoint specified in CTS Table 2.3-1 is also 5%. The adoption of ITS 3.1.9 and its Applicability will maintain requirements consistent with those found in CTS 3.1.8.1.A and 3.1.8.1.B. Since ITS 3.1.9 does not suspend the requirements of ITS 3.3.1, "Reactor Protection System (RPS) Instrumentation," it is clear that all applicable RPS setpoint requirements of ITS Table 3.3.1-1 apply even during MODE 2 PHYSICS TESTING. Additionally, ITS 3.1.9 provides the requirement that the "Reactor trip setpoints on the OPERABLE nuclear overpower channels are set to ≤ 5% RTP." This maintains a reactor trip setpoint requirement consistent with CTS 3.1.8.1.B. Finally, by allowing RPS overpower trip setpoints no higher than 5% RTP, CTS requirements ensured that this testing was performed at less than 5% RTP. The specified setpoints maintain requirements consistent with ITS 3.1.9.a.

Because the adoption of ITS 3.1.9, in lieu of CTS 3.1.8.1.A and 3.1.8.1.B, though significantly different in format, maintains requirements consistent with CTS 3.1.8.1.A and 3.1.8.1.B, this change is administrative in nature. This change does not result in any new requirements nor does it result in the removal of any current requirements.

A9 CTS 3.5.2.3 established a requirement that "the worth of single inserted control rods during criticality are limited by the restrictions of Specification 3.1.3.5 and the Control Rod Position Limits defined in Specification 3.5.2.5." CTS 3.1.3.5 established requirements for safety rod withdrawal and limitations on regulating rod group insertion as established by Specification 3.5.2.5. The CTS did not explicitly establish a required action to verify that the potential ejected rod worth of a misaligned rod is within the assumptions used in the rod ejection analyses. However, it is an implicit requirement that CTS 3.5.2.3 would apply to misaligned CONTROL RODS. Therefore, CTS 3.5.2.3 is considered to embody the requirements of NUREG-1430 Required Action A.2.4 (ITS Required Action A.2.2.2).

A10 CTS 3.1.3.5 requires that the safety rod groups be fully withdrawn prior to any other reduction in shutdown margin by deboration or regulating rod withdrawal during the approach to criticality. NUREG-1430 and ITS LCO 3.1.5 require that each safety rod be fully withdrawn during MODES 1 and 2. The NUREG and ITS are predicated on an "individual" rod basis and not a group position basis. Although this translates into an identical requirement to have all safety rods fully withdrawn in MODES 1 and 2, there will be no safety rod group position requirements or actions in the ITS, only individual safety rod requirements and actions. This change in presentation of requirements is considered administrative in nature and does not change the actual requirement that all safety rods be fully withdrawn during MODES 1 and 2. This change is consistent with NUREG-1430.

The Applicability for CTS 3.1.3.5 is "prior to any other reduction in shutdown margin by deboration or regulating rod withdrawal during the approach to criticality." This statement, as applied at ANO-1, requires compliance with regulating rod insertion limits while in Hot Standby and Startup reactor operating conditions (equivalent to ITS MODE 2). Although not explicitly applied to Power Operations (MODE 1), this Specification must be applied during these conditions to preserve the SHUTDOWN MARGIN requirements. Because the Applicability of ITS 3.1.5 maintains requirements consistent with the Applicability of CTS 3.1.3.5, as applied at ANO-1, this change is administrative in nature and neither adds any additional requirements nor removes any existing requirements.

A11 CTS 4.7.1.2 requires that if a CONTROL ROD is misaligned from its group average position by more than 9 inches (6.5%), it shall be declared inoperable and the limits of CTS 3.5.2.2 shall apply. CTS 3.5.2.2 includes some actions which are applicable to all inoperable CONTROL RODS and some actions which are specifically applicable only to CONTROL RODS which are inoperable due to misalignment. Although ITS 3.1.4 and 3.1.6 differentiate between inoperable and misaligned rods, these Specifications are written in such a way as to provide appropriate actions to compensate for either case. (The specific discussion of the differences between the actions of CTS 3.5.2.2 and ITS 3.1.4 and 3.1.6 are contained in separate DOCs.) Through the adoption of ITS 3.1.4 and 3.1.6, the intent of CTS 4.7.1.2 which is to ensure that the appropriate actions are taken in the event that a CONTROL ROD or APSR becomes misaligned from its group average position is maintained. No new requirements are added by this change and the only requirement removed is the requirement to declare the misaligned rod inoperable based only on misalignment. This difference is a result of the difference in philosophy of implementation between the CTS and ITS. Therefore, this change is considered administrative and represents no significant change to the requirements for operating with a misaligned rod.

A12 CTS markup was annotated to show adoption of ITS 3.1.7 Actions Note. This change is administrative in that the Note is required by the format and usage associated with the structure and presentation of the Actions in NUREG-1430.

A13 The CTS 4.7.1.2 provision that allowed the CONTROL ROD with the greatest
3.1-07 deviation from the group average position to be evaluated first for the purpose of determining compliance with CTS requirements has been shown as administratively deleted. This allowance is not contained within nor does it support the requirements of NUREG-1430 or the ITS. CTS 3.5.2.2.1 does not allow operation with more than one control rod misaligned by more than nine inches from the group average. The deletion of this CTS allowance is acceptable because of the conservative nature of the ITS in addressing multiple CONTROL ROD deviations from their group average position. This change is consistent with NUREG-1430.

TECHNICAL CHANGE -- MORE RESTRICTIVE

M1 CTS Specification 4.9 currently provides for the evaluation of reactivity anomalies during operation of the unit. The CTS requires that the reactivity anomaly be evaluated "periodically" by comparison of the actual boron concentration to the predicted boron concentration. Additional discussion of the process of anomaly determination is provided in the Bases of CTS Specification 4.9. This periodic evaluation is presently administratively controlled with a frequency of approximately once per month. Adoption of the NUREG-1430 Specification 3.1.2 will require that the Frequency be performed in accordance with a more restrictive schedule than that presently identified in the CTS. Specifically, ITS SR 3.1.2.1 will have a Frequency of "prior to entering MODE 1 after each fuel loading" and "31 EFPD thereafter" following 60 EFPD of cycle operation as established in the Note. These SR Frequencies are acceptable because they explicitly establish the time frame for the performance of the SR and are in accordance with current administrative practices. This change is consistent with NUREG-1430.

M2 CTS 4.9 provides for the evaluation of reactivity anomalies during operation of the unit. The CTS action requires that the reactivity anomaly be evaluated to determine the cause. No other specific power reduction or operating restriction is applied. ANO will adopt the NUREG-1430 LCO 3.1.2 ACTIONS with a specified Completion Time of 7 days for Condition A. This Required Action is more restrictive than the requirements established within the CTS. This change is appropriate because the Required Actions preserve the assumptions used in the accident analyses through the implementation of appropriate operating restrictions. This change is consistent with NUREG-1430.

M3 Not used.

M4 CTS 3.1.7.1 establishes the limits on Moderator Temperature Coefficient (MTC). The CTS states that the limits are applicable when "the reactor is not shutdown." The interpretation of this statement represents a condition where the reactor would be made 1% $\Delta K/K$ subcritical which represents a condition consistent with the CTS definition for Hot Shutdown. The slightly more restrictive Applicability of MODES 1 and 2 in ITS LCO 3.1.3 will provide requirements on MTC that are consistent with other reactivity control parameters in the ITS. This change is classified as slightly more restrictive due to the slight calculational difference that exists between a reactor shutdown by 1% $\Delta K/K$ and a reactor that has K_{eff} of less than or equal to 0.99. This change is consistent with NUREG-1430.

M5 CTS 3.5.2, "Control Rod Group and Power Distribution Limits," has a defined Applicability of "during power operation." However, these CONTROL ROD OPERABILITY requirements are in practice applied during both CTS Power Operation and Hot Standby operating conditions. The CONTROL ROD OPERABILITY criteria defined by CTS 3.5.2 will correlate with requirements in ITS 3.1.4, 3.1.5, 3.1.6, 3.2.1 and 3.2.2. All of these ITS Specifications have an Applicability of MODES 1 and 2. By specifying Applicability in MODE 2, in addition to MODE 1, requirements will exist in the ITS where none were previously specified in the CTS. This Applicability represents more restrictive operating requirements than those specified in the CTS. This change is necessary to ensure that CONTROL ROD OPERABILITY exists in MODES that are consistent with the ITS SHUTDOWN MARGIN requirements preserved by the CONTROL ROD alignment and positioning. This change is consistent with NUREG-1430.

M6 The requirements of NUREG-1430 LCO 3.1.1, "SHUTDOWN MARGIN (SDM)," will be adopted as presented in ITS. No explicit requirements for SDM, as defined in ITS Section 1.1, at other than power operation conditions, exist in the CTS. When the RCS temperature was below the minimum temperature for criticality given in CTS 3.1.3.1, CTS 3.1.3.3 required a degree of subcriticality, based on the reactivity effect of depressurization, be maintained. In addition, there are subcriticality requirements contained in the CTS Section 1.0 definitions of Hot Shutdown, Cold Shutdown, and Refueling Shutdown. Adoption of ITS 3.1.1 is more restrictive in that specific LCO requirements, Required Actions, and Surveillance Requirements are established which were not previously, explicitly required in the CTS. This change is necessary to ensure that controls and compensatory measures are in place during MODES 3, 4, and 5 that ensure the subcriticality of the unit is maintained. This change is consistent with NUREG-1430.

M7 CTS 3.5.2.2.1 states "Operation with more than one inoperable rod ... shall not be permitted." The lack of a specified action time implies that CTS 3.0.3 applies. CTS 3.0.3 requires the unit to be in Hot Shutdown (ITS MODE 3) in 13 hours. The equivalent action established in NUREG-1430, LCO 3.1.4 Required Action C.2 and LCO 3.1.5 Required Action B.2, requires the unit to be in MODE 3 within 6 hours. ANO-1 will adopt these more restrictive requirements in order to provide explicit Completion Times where none are currently expressed. This change is consistent with NUREG-1430.

M8 The CTS requirement for performance of CONTROL ROD drop time testing is, per CTS 4.7.1.1, "following each refueling outage prior to return to power" and in Table 4.1-2 Item 1, "Each Refueling Shutdown." The NUREG-1430 SR 3.1.4.3 Frequency of "Prior to reactor criticality after each removal of the reactor vessel head" will be adopted to provide a test Frequency consistent with activities that have the potential of affecting the rod drop time. This change in Frequency imposes the additional requirement of performing CONTROL ROD drop time testing following any removal of the reactor vessel head not just following a refueling shutdown or outage. It additionally requires completion of this testing prior to criticality rather than "prior to return to power." Adoption of the ITS SR 3.1.4.3 Frequency is appropriate because it correlates the SR Frequency to the activity that has the greatest probability of affecting the CONTROL ROD capability and characteristics. This change is consistent with NUREG-1430.

M9 CTS 3.5.2.2.5 correlates to ITS 3.1.4 Required Action A.2.2.1. CTS 3.5.2.2.5 requires a reduction in power while operating with a misaligned CONTROL ROD; however, there is no specified Completion Time. ITS 3.1.4 Required Action A.2.2.1 similarly requires a reduction in THERMAL POWER, while operating with a misaligned CONTROL ROD, and includes the added restriction of a 2 hour Completion Time. The adoption of the Completion Time ensures conservative actions are expeditiously initiated to minimize the potential effects of power redistribution and subsequent power peaking. This change is consistent with NUREG-1430.

M10 The first two sentences of CTS 3.5.2.2.2 and the first sentence of CTS 3.5.2.2.3 correlate to ITS 3.1.4 Required Actions A.1.1, A.1.2, C.1.1, and C.1.2 with the exception of the second specified Completion Time for Required Action A.1.1. Therefore, the second Completion Time for ITS 3.1.4 Required Action A.1.1 is shown as being adopted. This addition will impose more stringent requirements on unit operation by specifying that SDM be verified on a 12 hour Frequency after the initial verification. While this is not a departure from current operating practices, it is an additional requirement not given in the CTS. This periodic verification of SDM is appropriate because of the potential effects associated with power level changes, power redistribution, and transient fission product poisons. This change is consistent with NUREG-1430.

M11 ITS SR 3.1.4.1, SR 3.1.5.1 and SR 3.1.6.1 requirements to verify that CONTROL RODS and APSRs are within 6.5% of their group average and that safety rods are fully withdrawn, on a 12 hour Frequency, has been adopted. No specific requirement for this verification is expressed in CTS. Current operating practice is to perform these verifications in conjunction with and on the same frequency as the check of the Absolute and Relative Position Indication instrumentation. This change is consistent with NUREG-1430.

M12 CTS 3.1.7.3 currently requires the unit to be placed "in at least HOT STANDBY" (reactor critical below 2% power) if the Moderator Temperature Coefficient (MTC) is outside its limits. The adoption of ITS 3.1.3 ACTION A will require the unit to be placed in MODE 3 if MTC is outside its limits. This conservative action is consistent with other ITS reactivity control Specifications and removes the unit from the Applicability established for ITS 3.1.3. This change is consistent with NUREG-1430.

M13 ITS 3.1.7 Applicability has been adopted. No explicit Applicability exists for the equivalent requirements found in CTS 4.7.1.3. The addition of the ITS 3.1.7 MODE 1 and 2 Applicability has been made to provide requirements for verification of CONTROL ROD and APSR position indication that are consistent with ITS LCO 3.1.4, 3.1.5, 3.1.6, 3.2.1 and 3.2.2 requirements governing CONTROL ROD positioning. This change is consistent with NUREG-1430.

M14 The CTS markup reflects the adoption of NUREG-1430 LCO 3.1.8 PHYSICS TESTS Exceptions - MODE 1 as it is presented in the ITS. The CTS excepted certain individual specifications with a statement such as "except for physics testing." [This is one frequent usage of the exception and is not intended to represent every usage of the exception in the CTS.] No differentiation was made in the CTS of the applicability of these exceptions with respect to the unit's THERMAL POWER level. Further, only a minimal number of specific requirements were presented in the CTS during the conduct of PHYSICS TESTS and no required actions were presented. ITS 3.1.8 LCO, ACTIONS and SRs have been shown as adopted to provide this power level (or MODE) dependency. Although the PHYSICS TEST exceptions existed in the CTS, the power level dependency did not exist. Thus, the ITS will result in more restrictive requirements. This change is consistent with NUREG-1430.

Additionally, the ACTIONS and SRs of ITS 3.1.9 PHYSICS TEST Exceptions-MODE 2 have been adopted. These items function to verify that the LCO requirements are satisfied and provide necessary remedial actions should the requirements not be satisfied. Because the CTS did not impose specific restrictions, required actions or additional surveillance requirements comparable to those established in the ITS, this change is more restrictive. The adoption of the additional requirements, Required Actions and SRs is appropriate due to the nature of PHYSICS TESTS. This change is consistent with NUREG-1430.

M15 ITS 3.1.2 Required Action A.2 and Required Action B.1 will be adopted. The Frequency of ITS SR 3.1.2.1 and the Notes modifying this SR are also adopted. The adoption of these requirements, where none existed previously, represents more restrictive requirements on the unit. These Required Actions provide appropriate guidance for continued unit operation with a reactivity anomaly that exceeds its limit and conservative action to place the unit in MODE 3 should the Required Actions and associated Completion Times of Condition A not be met. The SR Notes are necessary to provide guidance for completion of the SR. The SR Frequency adopted is appropriate to determine the presence of a reactivity anomaly shortly after unit startup but prior to significant unit operation with the anomalous condition. The adoption of the SR Frequency is specifically more restrictive because it specifies the performance of the SR "once prior to entering MODE 1 after each fuel loading." This change is consistent with NUREG-1430.

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M16 The 72 hour Completion Time for ITS 3.1.4 Required Action A.2.2.2 (NUREG-1430 3.1.4 Required Action A.2.4) is shown on the CTS markup as being adopted in the ITS. This is more restrictive because no Completion Time was explicitly established in the CTS for the completion of ejected rod worth verification as required by CTS 3.5.2.3. The adoption of the Completion Time is appropriate to ensure that the verification is promptly initiated; thus, allowing implementation of compensatory measures, if appropriate. This change is consistent with NUREG-1430.

M17 The "no flow" rod drop time testing acceptance criteria is shown as being administratively deleted in the CTS 4.7.1.1 markup. This acceptance criteria and the conditions of the testing have not been demonstrated as being acceptable for satisfying the rod drop time surveillances that preserve the accident analysis assumptions. This allowance and its test criteria are not currently utilized by ANO-1. In fact SAR Section 3.A, does not allow completion of startup testing and entrance into MODE 1 without performing the full flow test. The deletion of this allowance from the CTS results in the ITS possessing more restrictive requirements than those established by the CTS. NUREG-1430 does not establish a similar "no flow" testing methodology or acceptance criteria, thus, this deletion of material is consistent with NUREG-1430.

3.1-07 M18 Not used.

M19 The CTS was annotated to show the adoption of ITS 3.1.4 Required Action A.2.2.3 with its Note (NUREG-1430 3.1.4 Required Action A.2.5) which will require verification of acceptable core linear heat rates (LHRs) during operation at less than or equal to 60% of the ALLOWABLE THERMAL POWER with a misaligned CONTROL ROD. This Required Action has a 72 hour Completion Time which is acceptable because core LHRs are limited by the THERMAL POWER reduction (ITS 3.1.4 Required Action A.2.2.1). The Required Action is preceded by a Note that specifies the Required Action is only required to be performed when THERMAL POWER is greater than 20% RTP. This establishes a requirement for verification of core power distribution during unit operation consistent with the OPERABILITY of the incore detector system. This change is consistent with NUREG-1430.

M20 The methodology specified in CTS 3.5.2.2.2 for restoring SDM, if it is determined to be less than adequate, allows boration to be secured once the worth of the inoperable rod has been met or once the limits of CTS 3.5.2.5.3 are met (i.e., the regulating rod groups are withdrawn above the SDM insertion limit curve given in the COLR). The ITS requirement will be that SDM be calculated and verified to be within the limit specified in the COLR taking into consideration the reactivity worth of the inoperable CONTROL ROD. Therefore, when addressing a single inoperable CONTROL ROD, the ITS will not allow boration to be secured once the regulating groups have been positioned above the SDM limits established by the regulating rod insertion curves given in the COLR. [Note: this discussion does not impact other CTS and ITS Specifications that would require continued boration should the regulating groups be inserted beyond their SDM insertion limits.] Thus, the ITS will be more restrictive because it will exclude an option for compliance that is present in the CTS. The ITS method of SDM verification is consistent with current operating practices, though not specified by CTS. The adoption of the ITS requirements is appropriate because the regulating rod group insertion limits curve given in the COLR was not derived such that SDM was preserved with an additional inoperable rod, nor is it intended to address this condition. This change is consistent with NUREG-1430.

M21 CTS 3.5.2.2.3 requires the unit to be placed in Hot Standby (reactor critical and <2% power) if the required SHUTDOWN MARGIN (SDM) can not be verified or obtained within 1 hour. The CTS does not establish a specific completion time for this required action. The adoption of ITS 3.1.4 ACTION B will require the unit be placed in MODE 3 (i.e., $K_{eff} < 0.99$) within 6 hours if adequate SDM is not verified within one hour or if boration is not initiated to obtain SDM within one hour. Thus, ITS 3.1.4 ACTION B is more restrictive than the corresponding CTS requirement in that it requires the unit be taken to a lower MODE as a result of failure to satisfy SDM requirements. These additional requirements are necessary to remove the unit from an operating condition when boration has been inadequate to restore the necessary SDM. This change is consistent with NUREG-1430.

M22 CTS 3.5.2.2.3 correlates to ITS 3.1.4 Required Action B.1. CTS 3.5.2.2.3 requires that the unit be placed in Hot Standby if the preceding CTS actions have been unsuccessful in restoring the required SDM. The CTS does not specify a Completion Time. ITS 3.1.4 Required Action B.1 similarly addresses the Required Actions should the preceding ITS actions not be successfully implemented, and includes the added restriction of a 6 hour Completion Time. The adoption of the Completion Time ensures conservative actions are initiated to remove the unit from the LCO Applicability. This change is consistent with NUREG-1430.

M23 CTS 3.5.2.2.6 correlates to ITS 3.1.4 Required Action A.2.1. These Specifications allow the unit to continue to operate at unrestricted power levels above 60% ATP provided the inoperable regulating rod can be positioned such that it is contained within the allowable group alignment limits and the associated group positioned within the allowed group insertion limits. The CTS does not specify a Completion Time for this action. However, ITS 3.1.4 Required Action A.2.1 includes the added restriction of a 2 hour Completion Time. The adoption of the Completion Time ensures conservative actions are initiated to minimize the potential affects of power redistribution and subsequent power peaking. This change is consistent with NUREG-1430.

M24 CTS 3.5.2.2.6 correlates to ITS 3.1.6 Required Action A. 1. These Specifications allow the unit to continue to operate at unrestricted power levels above 60% ATP provided the inoperable APSR can be positioned such that it is contained within the allowable group alignment limits. The CTS does not specify a Completion Time for this action. However, ITS 3.1.6 Required Action A.1 includes the added restriction of a 2 hour Completion Time. The adoption of the Completion Time ensures conservative actions are initiated to minimize the potential affects of power redistribution and subsequent power peaking. This change is consistent with NUREG-1430.

M25 CTS 3.5.2.2.6 specifies that operation above 60% of ALLOWABLE THERMAL POWER (ATP) may continue with an APSR inoperable due to misalignment (as established by CTS 4.7.1.2) if the group is positioned such that the rod is no longer misaligned. This action restores compliance with the LCO; thus, no further action is required and power operation is unrestricted. The CTS establishes no required action if the unit is below 60% ATP. Further, the CTS does not specifically state the required action should an APSR not be capable of being aligned within its group alignment limits. The ITS will require THERMAL POWER to be reduced to ≤ 60% of the ALLOWABLE THERMAL POWER with a Completion Time of 2 hours. This change will incorporate an action that is implied by the current license basis.

M26 The required actions of CTS 3.5.2.2.6 do not specify a time limit for the completion of
3.1-10 the required actions in the event of an inoperable or misaligned APSR, as discussed in DOC-M25 and DOC-M26. The Required Actions of ITS 3.1.6 Condition B provide guidance to ensure the unit is placed in a safe condition in the event the Required Actions and associated Completion Times of ITS 3.1.6 Condition A are not met. This change is consistent with NUREG-1430.

M27 CTS 3.5.2.2.6 states that with a rod in the axial power shaping group declared
3.1-10 inoperable, operation above 60 percent of the thermal power allowable for the reactor coolant pump combination may continue provided the rods in the group are positioned such that the rod that was declared inoperable is contained within the allowable group average position limits. No time limit is provided for the implied reduction of power to less than 60 percent of the allowable power level. ITS 3.1.6 Required Action A.1 provides a requirement to perform SR 3.2.5.1 within 2 hours and within 2 hours after each APSR movement. The performance of this SR is intended to assure that power peaking factors are within the appropriate limits with a misaligned or inoperable APSR. Requiring the performance of this SR within the specified Completion Time is considered to be a more restrictive requirement in that although the CTS would require a power reduction, there is no time limit specified for the completion of this action. This change is consistent with NUREG-1430, as modified by TSTF-220, as modified by a generic change currently be tracked as ANO-1-063.

TECHNICAL CHANGE -- LESS RESTRICTIVE

L1 The ITS SR 3.1.4.2 required Frequency is less restrictive than the CTS. CTS Table 4.1-2 Item 2 requires movement of CONTROL RODS on a frequency of every two (2) weeks. The ITS Frequency will be 92 days. Based on the historical operating reliability of the CONTROL RODS, this change in Frequency from 14 days to 92 days is not considered to represent a significant reduction in the ability to verify system reliability. This position is supported by Generic Letter 93-05, "Line-Item Technical Specifications Improvements to Reduce Surveillance Requirements for Testing During Power Operation." The reduction in Frequency of CONTROL ROD freedom of movement verification lessens the overall number of CONTROL ROD drive system manipulations (power supply transfers, safety rod movement, etc.) and thereby tends to lessen the overall likelihood of dropped CONTROL RODS which can occur due to failures of portions of the control rod drive system. Though not easily quantifiable, the reduction in the overall likelihood of producing a dropped CONTROL ROD, specifically those caused by a system failure during testing, represents an overall increase in the safety of the unit. This change is consistent with NUREG-1430.

L2 ITS SR 3.1.4.3 will be adopted in place of CTS 4.7.1.1. The adoption of ITS SR 3.1.4.3, including its NOTE, provides ANO-1 with the additional flexibility of testing CONTROL ROD drop times with reactor coolant flow conditions other than full flow and no flow. By restricting operation of the unit to the reactor coolant pump combination used during rod drop testing, reactor coolant flow conditions, in the event of a reactor trip, are assured to be similar to those during CONTROL ROD drop time testing and thereby the testing is bounding. This change is consistent with NUREG-1430.

L3 Testing to insure freedom of movement of "Each Rod" is required above Cold Shutdown by CTS Table 4.1-2, Item 2. This testing is currently applied to both the CONTROL RODS and APSRs. Similar testing of the CONTROL RODS only, will be required by ITS SR 3.1.4.2 and will be applicable only in MODES 1 and 2. The adoption of the NUREG-1430 SR will result in less restrictive requirements. Specifically, the adoption of ITS SR 3.1.4.2 will remove the CTS requirement to perform freedom of movement testing on the APSRs. The purpose of this testing is to ensure that CONTROL RODS are not mechanically bound and will therefore insert upon a reactor trip. Because the APSRs, by design, do not insert upon a reactor trip, this testing is not required on the APSRs. Further, the APSRs are not credited as providing any of the required SDM on a reactor trip. This change is consistent with NUREG-1430.

L4 The CTS 3.5.2.2.2 and 3.5.2.2.4 requirements to exercise the remaining CONTROL RODS, in the event that a CONTROL ROD is declared inoperable, have been removed to improve the consistency between NUREG-1430 and ITS. The intent of these requirements was to provide for testing which could detect if additional CONTROL ROD(S) were immovable. Industry experience indicates that CONTROL ROD movement testing has in only a limited number of cases, led to the determination that a CONTROL ROD was mechanically immovable. This determination that a CONTROL ROD is mechanically immovable is instead much more likely to be made during initial CONTROL ROD withdrawal or during drop time testing. By design, electrical problems which prevent movement of CONTROL RODS, generally, do not prevent the insertion of CONTROL RODS in the event of a reactor trip. Additionally, industry experience indicates that this testing can and has resulted in reactor trips and dropped rods. The relatively low likelihood that this testing will actually reveal the inability of a CONTROL ROD to insert upon a reactor trip, coupled with the unnecessary challenges to safety systems caused by reactor trips or dropped rods which can occur as a result of this testing supports its removal from CTS. This change is consistent with NUREG-1430.

Note: This change will not remove the requirement to perform routine freedom of movement verification of the CONTROL RODS on a Frequency of every 92 days in accordance with ITS SR 3.1.4.2.

L5 CTS 3.5.2.2.3 has been modified to be consistent with the requirements of ITS 3.1.4 Required Action B.1. CTS 3.5.2.2.3 requires the unit be placed in Hot Standby (i.e., reactor critical but THERMAL POWER < 2% RTP) if, after one hour, SDM had not been verified to be greater than or equal to that required by the COLR. This CTS action is required regardless of whether or not boration is in progress to establish the required SDM. ITS 3.1.4 allows continued operation after one hour, even if the required SDM has not been verified, provided boration to establish SDM has been initiated. The adoption of the ITS 3.1.4 requirements allow the unit staff to focus on the restoration of required SDM without the additional operator burden of performing a unit shutdown. The initiation of boration to establish SDM will, in most cases, result in a reduction in power level which requires significant attention from the operating staff. This reduction of power level, when further complicated by the existence of an inoperable or misaligned CONTROL ROD, significantly complicates the operation of the Control Rod Drive System. These complications require even more attention from the operating staff. In light of these complicating factors, the requirement to shutdown the unit within one hour while less than adequate SDM exists, provided boration has been initiated to establish SDM, is not in the best interest of safety; and therefore, is not being retained. This change is consistent with NUREG-1430.

L6 CTS 3.1.3.5 requires that all safety rod groups be fully withdrawn prior to and during the approach to criticality. CTS 3.1.3.7 provides the action requirements if CTS 3.1.3.5 is not met, unless otherwise excepted. CTS 3.1.3.7 requires the inserted safety rod group be withdrawn within 15 minutes or the reactor be placed in at least Hot Shutdown (MODE 3) within the next 15 minutes. These CTS actions are predicated on entire "group" being out-of-position while the unit is in its approach to criticality. Individual safety rod and multiple rod inoperability (due to misalignment, loss of position indication, or slow drop time) is addressed by the CTS 3.5.2 and CTS 4.7.1 series of Specifications.

NUREG-1430 and ITS LCO 3.1.5 require that each safety rod be fully withdrawn during MODES 1 and 2. The NUREG and ITS are predicated on an "individual" rod basis and not a group position basis. Although this translates into an identical requirement to have all safety rods fully withdrawn in MODES 1 and 2, there will be no safety rod group position requirements or actions in the ITS, only individual safety rod requirements and actions. Thus, the ITS will not include actions comparable to CTS 3.1.3.7 requirements. This results in the ITS providing less restrictive requirements than the CTS.

As an effort to highlight these changes, CTS 3.1.3.7 was marked to show ITS 3.1.5 Required Action A.2, which declares inoperable within 1 hour, a safety rod that is not fully withdrawn. This declaration results in the performance of ITS 3.1.4 Required Actions which also preserve shutdown margin while addressing the potential operational concerns associated with a misaligned rod.

The removal CTS 3.1.3.7 group action requirement is acceptable because the ITS will continue to provide safety rod positioning requirements consistent with accident analysis assumptions. Operation with multiple safety rods misaligned or not fully withdrawn will not be allowed in the ITS; just as it is not allowed in the CTS. ITS 3.1.5 Required Action B.2 will require unit to be placed in MODE 3 within 6 hours of entry into Condition B (more than one safety rod not fully withdrawn). This time is reasonable and is based on the time required for the operator to reduce THERMAL POWER from RTP to MODE 3 without challenging unit systems. It must be noted that the CTS 3.1.3.7 time frames to be in Hot Shutdown were based on the reactor being subcritical during the approach to criticality. This change is consistent with NUREG-1430.

L7 During Power Operation (MODE 1), CTS 3.5.2.1 provides the "available shutdown margin" requirement and the action requirements in the event that SHUTDOWN MARGIN (SDM) is not adequate. In the ITS, the combination of LCO 3.1.5, "Safety Rod Insertion Limits," LCO 3.2.1, "Regulating Rod Insertion Limits," and the individual CONTROL ROD OPERABILITY requirements of LCO 3.1.4, "CONTROL ROD Group Alignment Limits," preserve the SDM requirements while in MODES 1 and 2. Maintaining CONTROL RODS within these limits will provide assurance that sufficient negative reactivity is available for insertion upon a reactor trip. During unit operation with an inoperable CONTROL ROD, CTS 3.5.2.2.2 provides a requirement to verify adequate SDM and initiate boration if SDM requirements were not met. Similarly, in the ITS, LCO 3.1.4, "CONTROL ROD Group Alignment Limits," will provide Required Actions that preserve the SDM requirements. [The relationship of ITS 3.2.1, "Regulating Rod Insertion Limits," to CTS 3.5.2.1 will be discussed, as appropriate, as a part of the discussion of ITS 3.2.1.]

In the CTS, if the "available shutdown margin" is less than required, CTS 3.5.2.1 directs the operator to "immediately initiate and continue boration injection until the required shutdown margin is restored," and CTS 3.5.2.2.2 directs that an "evaluation shall be initiated immediately to verify the existence of an available shutdown margin greater than or equal to that specified in the COLR." In the ITS, if the LCO 3.1.4 and 3.1.5 requirements are not met, LCO 3.1.4 and 3.1.5 Required Actions A.1.1 and A.1.2; LCO 3.1.5 Required Actions B.1.1 and B.1.2; and LCO 3.1.4 Required Actions C.1.1 and C.1.2 require verification of adequate SDM and initiation of boration to restore adequate SDM within 1 hour of entry into the Condition. The adoption of ITS 3.1.4 and 3.1.5 Actions will represent a relaxation of the requirement to "immediately" initiate an action such as boration. This less restrictive requirement is acceptable because the 1 hour Completion Time is adequate for determining the SDM, and if necessary, allows the operator sufficient time to align the required valves and start the necessary pumps without unduly challenging the operator's ability to safely operate the unit. This change is consistent with NUREG-1430.

L8 CTS 3.5.2.2.3 requirements for determining SHUTDOWN MARGIN (SDM) have been modified by the adoption of the SDM definition in Section 1.1 of the ITS and its application in ITS 3.1.4 and 3.1.5. By CTS requirements, the reactivity worth of any inoperable rod, regardless of the reason for inoperability, has to be accounted for as if it will not insert into the core upon a reactor trip. The ITS will require that only the reactivity worth of CONTROL RODS which are not capable of being fully inserted into the core need be considered as penalties to SDM. The intent of the CTS requirement to consider the reactivity of an inoperable CONTROL ROD in the SDM calculation is to insure that the reactor is in fact subcritical, by the amount specified in the COLR, following the insertion of the CONTROL RODS upon a reactor trip. Provided the inoperability of a CONTROL ROD is not due to the fact that the rod is not capable of fully inserting into the core upon a reactor trip, the requirement to consider that rod incapable of inserting its negative reactivity upon a reactor trip is overly conservative. This change is consistent with NUREG-1430.

L9 The CTS markup was annotated to reflect that the Moderator Temperature Coefficient (MTC) requirements of ITS LCO 3.1.3 may be excepted during PHYSICS TESTS pursuant to the requirements of ITS LCO 3.1.9, "PHYSICS TESTS Exceptions - MODE 2." To satisfactorily determine the operational behavior and characteristics of the reactor following startup, it may be necessary to significantly increase RCS boron concentration to maintain required critical conditions. During the limited period of time that the elevated RCS boron concentrations may exist at higher than normal concentrations, the MTC may be more positive than that allowed by ITS LCO 3.1.3. It is acceptable to suspend the MTC LCO during PHYSICS TESTS in MODE 2 based on the usage of approved written procedures, administrative controls, the requirements of 10CFR50.59, and the ITS LCO 3.1.9 provisions in effect during the conduct of the PHYSICS TESTS. These exceptions accommodate LCO suspension to verify the fundamental characteristics of the nuclear reactor which is critical in demonstrating the adequacy of design, analytical models, and confirmation of analysis results. This change is consistent with NUREG-1430.

L10 The CTS markup was annotated to show the adoption of ITS LCO 3.1.8, "PHYSICS TEST Exceptions-MODE 1," and LCO 3.1.9, "PHYSICS TESTS Exceptions - MODE 2," allowances to suspend the requirements of ITS LCO 3.1.4, "CONTROL ROD Group Alignment Limits," and LCO 3.1.6, "APSR Alignment Limits," during the conduct of PHYSICS TESTS. These exceptions suspend certain ITS LCO requirements that did not have PHYSICS TESTS exceptions in the CTS. The adoption of these exceptions is acceptable based on approved written procedures, administrative controls, the requirements of 10CFR50.59, and ITS LCO 3.1.8 and LCO 3.1.9 provisions in effect during the conduct of PHYSICS TESTS. These exceptions accommodate LCO suspension to verify the fundamental characteristics of the nuclear reactor which is critical in demonstrating the adequacy of design, analytical models, and confirmation of analysis results. This change is consistent with NUREG-1430.

L11 CTS requirements for CONTROL ROD and APSR position indication instrumentation are presented in CTS 4.7.1.3 and in CTS Table 4.1-1, Items 23 and 24. CTS 4.7.1.3 requires that for a CONTROL ROD or APSR to be considered OPERABLE, it must be located with one of three specified channels of indication. CTS Table 4.1-1 Items 23 and 24 require shiftly (12 hour) channel checks of only two of the three channels of indication specified in CTS 4.7.1.3. Additionally, refueling frequency calibrations of only these two channels are required.

Adoption of ITS LCO 3.1.7 establishes a requirement that maintains the CTS requirement that each CONTROL ROD and APSR have one OPERABLE channel of position indication. Further, ITS SR 3.1.7.1 and SR 3.1.7.2, in lieu of CTS Table 4.1-1, Items 23 and 24, provide testing requirements that establish appropriate assurance that the instrumentation required by ITS LCO 3.1.7 is OPERABLE. The potentially confusing cross-channel comparison of the CHANNEL CHECK located in CTS 4.1-1 was removed to ensure that any one OPERABLE indication channel, which can be adequately surveilled, will satisfy the LCO. The removal of this CTS cross-channel comparison detail results in the ITS being less restrictive. This is acceptable because the requirement to perform a CHANNEL CHECK of the instrumentation used to satisfy the LCO requirement is present in the ITS as SR 3.1.7.1.

L12 Testing to insure freedom of movement of "Each Rod" is required above Cold Shutdown by CTS Table 4.1-2, Item 2. Similar testing of the CONTROL RODS will be required by ITS SR 3.1.4.2 and will be applicable only in MODES 1 and 2. The adoption of the NUREG-1430 SR will result in less restrictive requirements. Specifically, the adoption of ITS SR 3.1.4.2 will remove the CTS requirement to perform this testing on CONTROL RODS while in MODES 3 and 4. This change actually only removes the requirement to test the CONTROL RODS while in operational MODES in which OPERABILITY of the CONTROL RODS is <u>not</u> required. This change provides for the application of Surveillance Requirements consistent with the MODES of Applicability for the tested components and is consistent with NUREG-1430.

L13 Not used.

L14 The shutdown actions in CTS 3.1.9.3 are proposed for deletion. CTS 3.1.9.1 and
3.1-02 CTS 3.1.9.2 establish limits for the concentration of dissolved gases in the reactor coolant. These dissolved gas limits are intended to prevent possible control rod drive and/or control rod damage during a trip by ensuring that the control rod drive pressure housing is filled with water. CTS 3.1.9.3 specified an action to check the vessel level instrument vent for the accumulation of undissolved gases should the limits be exceeded. This action would be performed with the reactor shutdown because of the vent's location on the reactor vessel head. The dissolved gas limits will be relocated to the Technical Requirements Manual (TRM). The purpose of the dissolved gas limits is to protect the control rods from damage due to a loss of hydraulic buffering upon insertion due to a trip. The control rods are still capable of inserting into the core even with dissolved gases not within limits. However, the control rods may not be able to be withdrawn following such a trip. The TRM will contain actions which, in the event dissolved gas concentrations not within limits, will require the reactor vessel level instrument to be checked for the accumulation of undissolved gases within 24 hours, and the restoration of the concentration of dissolved gases to within limits within 24 hours. In the event these Required Actions and Completion Times are not met, the TRM actions also ensure that the conditions are evaluated under the ANO Corrective Actions Program, allowing site management to determine any limitations on continued operation of the unit. The deletion of the CTS 3.1.9.3 actions is acceptable since the presence of dissolved gases beyond limits will not affect the safety function of the control rods to insert into the core. Adequate guidance for ensuring appropriate corrective measures will be taken will be included in the TRM. Since the TRM is considered to be a part of the SAR by reference, changes to the TRM are controlled under the ANO 10 CFR 50.59 program.

LESS RESTRICTIVE -- ADMINISTRATIVE DELETION OF REQUIREMENTS

LA1 This information has been moved to the Bases, SAR, TRM or COLR. This information provides details of design or process which are not directly pertinent to the actual requirement, i.e., Definition, Limiting Condition for Operation or Surveillance Requirement, but rather describe an acceptable method of compliance. Since these details are not necessary to adequately describe the actual regulatory requirement, they can be moved to a licensee controlled document without a significant impact on safety. Placing these details in controlled documents provides adequate assurance that they will be maintained. The Bases will be controlled by the Bases Control Process in Chapter 5 of the proposed Technical Specifications. The details of performance of the

3.1-01 surveillances have generally been relocated to the TRM. The TRM and COLR are considered to be part of the SAR. Changes to the SAR, TRM, and COLR will be controlled by 10 CFR 50.59. This change is consistent with NUREG-1430.

CTS Location	New Location
3.1.7.2	Bases - SR 3.1.3.1
3.1.9.1	TRM
3.1.9.2	TRM
3.1.9.3	TRM
Figure 3.1.9-1	TRM
Table 4.1-3, Item 1.d	TRM
Table 4.1-3, Note 7	TRM
4.7.1.1	SAR - Section 7.2.2.2.1
4.7.1.2	Bases - B 3.1.4 LCO
4.7.1.3	Bases – B 3.1.7 Background

ANO-415 LA2 CTS Table 4.1-3 specifies a minimum sampling and chemical concentration analysis frequency for various plant systems and tanks at ANO-1. Most of these fluid systems are also addressed by explicit CTS concentration limits and action requirements. Item 1.f of this table, RCS boron concentration, has no explicit CTS requirements other than the minimum sampling and analysis frequency specified by this table for verifying RCS boron concentration 3 times a week. CTS 4.0.1 and 4.0.3 specify an implied LCO for this parameter in Modes 1, 2, 3, 4, and 5 because they require that (a) SRs shall be met during operational modes or other conditions specified for LCOs; and (b) failure to perform an SR within the allowed surveillance interval shall constitute noncompliance with the operability requirements of the associated LCO. ITS SR 3.1.1.1, to verify shutdown margin is within limits specified in the COLR every 24 hours, encompasses this RCS boron concentration limit in Modes 3, 4, and 5. ITS SR 3.1.4.1, to verify individual control rod positions are within 6.5% of their group average height every 12 hours, and SR 3.1.5.1, to verify each safety rod is fully withdrawn every 12 hours, encompass the boron concentration limit in Modes 1 and 2. Since required boron concentration and other reactivity-related controls are adequately addressed in redundant specifications, it is acceptable to relocate the minimum sampling and analysis frequency surveillance requirements discussed above to the TRM.

ANO-417 LA3 CTS 4.7.2 requires that when testing, reprogramming, or maintenance of the control rod drive patch panel and associated cables and instrumentation is performed, the control rod control "programming" must be validated. Each control rod has a relative and an absolute position indicator system. One set of outputs goes to the plant computer identified by a unique number associated with only one core position. The other set of outputs goes to a programmable bank of 68 edgewise meters in the control room. In the event that a patching error is made in the patch panel or connectors in the cables leading to the control rod drive assemblies or the control room meter bank is improperly transposed upon reconnection, these errors and transpositions will be discovered by a comparative check. This type of comparative check, however, will not assure detection of improperly connected cables inside the reactor building. These cables require verification by an independent person who is cognizant of the proper configuration. These requirements are not (a) used for detecting a significant abnormal degradation of the reactor coolant pressure boundary prior to a DBA, (b) used to indicate the status of or monitor a process variable, design feature, or operating restriction that is an initial condition of a DBA or transient, or (c) part of a primary success path in the mitigation of a DBA or transient. Since these requirements do not meet the criteria of 10 CFR 50.36(c)(2)(ii) for retention in the ITS, they are relocated to the SAR.

M7 CTS Table 3.5.1-1 Note 3 allowed continued operation above hot shutdown with the required source range instrument channel inoperable provided at least one intermediate range instrument was indicating greater than 1E-10 amps. No specific requirement existed in CTS to initiate repairs on this inoperable instrument. This CTS requirement has been replaced by ITS 3.3.9 ACTION B. The adoption of ACTION B will continue to allow operation above MODE 3 with the required source range instrument channel inoperable. However, the additional requirement to initiate action to repair the inoperable instrument channel within 1 hour is included. This additional requirement has been adopted to provide requirements consistent with NUREG-1430.

M8 CTS Table 3.5.1-1 RPS Functional Units 3 and 4, intermediate range instrument channels and source range instrument channels, both indicate that the actions of Note 1 are required in the event that the required instrument channel is inoperable. Note 1 requires that the unit be placed in hot shutdown (MODE 3) within 12 hours. No actions are specified in CTS to deal with their inoperability while in MODE 3 or below.

The requirements of Table 3.5.1-1 Note 1, as applied to the source range and intermediate range instrument channels, have been replaced by ITS 3.3.9 ACTION A and ITS 3.3.10 ACTION A, respectively. These new requirements are more restrictive in that they provide additional ACTIONS not required by CTS. These new ACTIONS provide requirements which ensure that the unit is placed in an acceptable condition to compensate for the inoperability of either the required source range instrument or the required intermediate range instrument. These additional ACTIONS are being adopted to provide requirements which are consistent with NUREG-1430 requirements.

M9 CHANNEL CALIBRATION requirements for the source range and intermediate range instruments on an 18 month Frequency have been adopted. Adoption of ITS SR 3.3.9.2 and ITS SR 3.3.10.3 represent more restrictive requirements because no equivalent requirements exist in CTS. These CHANNEL CALIBRATION requirements have been adopted to provide testing requirements consistent with NUREG-1430.

M10 The Required Action to be performed in the event the source range and/or intermediate range instruments are not operable is added to CTS Table 3.5.1-1. This action is illustrated in ITS 3.3.9 Required Action A3 and ITS 3.3.10 Required Action A2. The adoption of these ITS ACTIONS presents more restrictive requirements in that CRD trip breakers must be open in 1 hour when no required source range or intermediate range channel is inoperable. Opening the CRD trip breakers is more restrictive than the CTS requirement to place the unit in the CTS condition of Hot Shutdown when the one required source or intermediate range instrument is inoperable. These actions have been adopted to provide requirements consistent with NUREG-1430.

ANO-332

ANO-425

ANO-383 L12 The Note modifying ITS SR 3.3.1.2 has been adopted. No specific allowance is provided in the ANO-1 CTS which removes the requirement to perform this calibration while in MODE 1 at low power levels. Adoption of this Note provides an exception to the performance of this calibration which recognizes the difficulty in its performance and the limitations of the calorimetric while operating at very low power levels. Below 20% RTP ANO-1 calculates heat balance power level based totally upon the primary system parameters. Above 20% RTP, the secondary system parameters are also considered since they are generally more accurate at higher power levels. By allowing the delay in performance of this calibration until RTP is above 20%, a generally more accurate calorimetric (one including secondary system parameters) is available. The Note does not imply, however, that the function of the instrumentation should not be met. The required 18-month calibration of the channels provides assurance that the channel is functional and will respond to power changes. In addition, although below 20% RTP the comparison of the power instrumentation to a calorimetric or incore system is not appropriate, the status of the instrumentation is none-the-less tracked. Station procedures require operators to use heat balance power to assess rod index limits. Operators also use other indications to verify the approximate accuracy of power instrumentation below 20% RTP by comparing with known power indicators such as steam bypass valve position, auxiliary feed pump output, turbine load, etc. Delaying SR 3.3.1.3 performance until > 20% RTP does not prevent operators from assessing the availability of power instrumentation and, therefore, is acceptable. Furthermore, the adoption of this Note does not involve no significant hazards considerations. This allowance is being adopted to provide requirements consistent with NUREG-1430.

3.3.1-06

L13 The Note (2) modifying ITS SR 3.3.1.3 has been adopted. This Note allows a delay in performance of this SR until the unit is above 20% RTP. This allowance is appropriate due to the usable range of the incore nuclear instruments which are required for the performance of this SR. Below about 20% the incore nuclear instruments are not capable of providing reliable accurate indication of AXIAL POWER IMBALANCE. Adoption of this Note provides a specific relaxation of requirements where none existed in CTS. The Note does not imply, however, that the function of the instrumentation should not be met. The required 18-month calibration of the channels provides assurance that the channel is functional and will respond to power changes. In addition, although below 20% RTP the comparison of the power instrumentation to a calorimetric or incore system is not appropriate, the status of the instrumentation is none-the-less tracked. Station procedures require operators to use heat balance power to assess rod index limits. Operators also use other indications to verify the approximate accuracy of power instrumentation below 20% RTP by comparing with known power indicators such as steam bypass valve position, auxiliary feed pump output, turbine load, etc. Delaying SR 3.3.1.3 performance until > 20% RTP does not prevent operators from assessing the availability of power instrumentation and, therefore, is acceptable. Furthermore, the adoption of this Note does not involve no significant hazards considerations. This adoption is being made to provide requirements consistent with NUREG-1430.

3.3.1-06

L14 The CTS Table 4.1-1 Item 5 requirement, to perform CHANNEL FUNCTIONAL TEST on the intermediate range instrument channel, prior to each startup, if not performed within the previous week, has not been retained in the ITS. The requirement to perform this CHANNEL FUNCTIONAL TEST on a 31 day Frequency, was, however, retained as ITS SR 3.3.10.2. With the deletion of the required testing within 7 days of start-up, this testing will simply be required each 31 days. This 31 day frequency will also require the performance of the CHANNEL FUNCTIONAL TEST within 31 days of a start-up. This extension of the Frequency of this test from 7 days to 31 days prior to a start-up is acceptable based on operating experience which indicates that the intermediate range instrumentation is highly reliable and is not likely to experience an undetected failure during the extended period between tests.

ANO-383

L15 The requirement to perform a CHANNEL FUNCTIONAL TEST on the source range instrument channel within 7 days prior to start-up has not been retained in the ITS. This requirement was located in CTS 4.1-1 Item 6. This deletion has been made to provide testing requirements, for the required source range instrument channel, consistent with NUREG-1430.

A new requirement, to perform a CHANNEL CALIBRATION on the required source range instrument channel, on an 18 month Frequency, has been adopted in the ITS. No similar CHANNEL CALIBRATION requirements, for the source range instruments, existed in CTS. Because this calibration, by definition, encompasses the CHANNEL FUNCTIONAL TEST, performance of this calibration will ensure that testing, consistent with CTS requirements, continues to be required. The Frequency of this testing will, however, now be based strictly on the time since its last performance and not dependent upon whether or not the unit is in start-up. This change is acceptable, based on operating experience, which indicates that the source range instrumentation is highly reliable, and is no more susceptible to undetected failures within 7 days of start-up, than at any other time that the instrumentation is required to be OPERABLE.

The addition of the requirement to perform the CHANNEL CALIBRATION is discussed elsewhere in these Discussions of Change.

ANO-382 L16 NUREG 1430 LCO 3.3.9 and 3.3.10 ACTION A requirements were added to CTS Table 3.5.1-1 (See DOC M10). These requirements are revised to allow minor positive reactivity additions that are a result of plant temperature changes when no intermediate or source range neutron flux monitor is operable. During such conditions, various unit operations must continue, including the control of RCS temperature. The addition of this allowance is acceptable since reactivity controls are maintained for the plant mode in which the condition exists. This change is consistent with NUREG-1430, as modified by generic change TSTF-286, Revision 2.

ANO-333

CTS DISCUSSION OF CHANGES

ITS Section 3.3B: Instrumentation - ESAS

Note: ITS Section 3.3B package includes the following ITS:

ITS 3.3.5 Engineered Safeguards Actuation System (ESAS) Instrumentation
ITS 3.3.6 ESAS Manual Initiation
ITS 3.3.7 ESAS Actuation Logic

which address the corresponding NUREG-1430 LCOs.

ADMINISTRATIVE

A1 The designated change represents a non-technical, non-intent change to the Arkansas Nuclear One, Unit 1 Current Technical Specifications (CTS) made to make the ANO-1 Improved Technical Specifications (ITS) consistent with the B&W Standard Technical Specification (RSTS), NUREG-1430, Revision 1. This change does not alter the requirements of the CTS or NUREG. Examples of this type of change include: wording preference; convention adoption; editorial, numbering and formatting changes; and hierarchy structure.

A2 The ANO-1 CTS Bases will be administratively deleted in their entirety in favor of the NUREG-1430 Bases. The CTS Bases will be reviewed for technical content that will be identified for retention in the ITS Bases.

A3 CTS 3.5.1.1 and 3.5.1.2 represent information on the proper action when the number of channels is less than required by CTS Table 3.5.1-1. For example, CTS 3.5.1 does not clearly specify that the number of channels identified in Table 3.5.1-1, Column 1, are required to be OPERABLE, and CTS 3.5.1.2 provides limitations for inoperable channels. Similarly, CTS 4.1.a, and 4.1.b contain information on the proper application of CTS Table 4.1-1. These Specifications and the format of the referenced Tables are replaced with the appropriate ITS requirements. The CTS markup for these Specifications and Tables does not attempt to depict all of the changes required to adopt the ITS format. Rather, the appropriate specific Discussion of Change (DOC) is indicated along with the appropriate CTS versus ITS cross reference. Therefore, this change in format is considered administrative.

A4 Surveillance frequencies in CTS Table 4.1-1 have been replaced with those from NUREG-1430. The CTS and corresponding ITS Frequencies are as follows:

CTS	ITS
S - Each shift	12 hours
W - Weekly	7 days
M - Monthly	31 days
D - Daily	24 hours
T/W - Twice per week	96 hours
Q - Quarterly	92 days
P - Prior to each startup if not done previous week	Not Used
B/M - Every 2 months	Not Used
R - Once every 18 months	18 months
PC - Prior to going Critical if not done within previous 31 days	Not Used
NA - Not Applicable	Not Used
SA - SA Twice per Year	184 days

(Note: Not all Frequencies are applicable to this package.)

A5 The Notes which allow for separate entry into the ACTIONS of ITS 3.3.5, ITS 3.3.6, and ITS 3.3.7 have been adopted. These additions have been made to provide requirements in a format consistent with NUREG-1430. The addition of these Notes maintains allowances consistent with the use and application of the requirements of the corresponding portions of CTS Table 3.5.1-1. This change represents a change in presentation format only with no addition or deletion of requirements.

A6 Requirements for instrument channels presented in CTS Table 3.5.1-1 have been replaced by the requirements of ITS 3.3.5. This change maintains the requirement for three OPERABLE channels of instrumentation for each of the required parameters. It does represent a change in format for these requirements. However, no additional requirements have been added by this change and no current requirements have been deleted.

A7 The term Minimum Degree of Redundancy as presented in CTS, i.e., Table 3.5.1-1 Column 4, will not be retained in ITS. Omission of this term is not considered to result in any changes in requirements since the intent of this column is consistent with application of Table 3.5.1-1 Column 3, "Minimum Channels Operable," which is retained (although the format is changed per DOC A3). Removal of this term and its usage from the CTS does not represent any actual change in requirements, only a change in presentation.

A8 The CTS requirements for the ESAS manual trip pushbuttons found in CTS Table 3.5.1-1 have been replaced by the requirements of ITS 3.3.6. This change maintains the requirement for two OPERABLE channels of manual actuation instrumentation for each of the required Functions. It does however represent a change in format for these requirements, although no additional requirements have been added by this change and no current requirements have been deleted.

A9 CTS Table 3.5.1-1, Engineered Safeguards Actuation System (ESAS), Functional Units 1, 2, 3, 4, and 5 have been replaced by ITS LCO 3.3.7. Although the CTS does not clearly present these requirements as an LCO, the requirements of these portions of Table 3.5.1-1 are treated as such by ANO-1. The adoption of ITS LCO 3.3.7 represents a change in format. However, this change in format does not change the application of the requirements found in CTS as they relate to the ESAS Actuation Logic Channels.

A10 The requirement to test the ESAS Manual Trip Functions Logic on a monthly basis will no longer be individually specified as it is in CTS Table 4.1-1 Item 43 b. This CTS requirement is redundant to the testing requirements presented in CTS Table 4.1-1 Items 14, 16, 18, and 20. The design of the ESAS at ANO-1 is such that performance of the CHANNEL FUNCTIONAL TEST of the Actuation Logic Channels encompasses the manual actuation system logic test specified in CTS Table 4.1-1 Item 43 b. Testing of the ESAS Actuation Logic Channels, as required by ITS SR 3.3.7.1, will maintain the testing requirements consistent with CTS.

A11 The requirement to perform a CHANNEL CHECK on the reactor building (RB) pressure high-high instrument channels (Reactor Building Spray System Analog Channels, Reactor Building Pressure Channels) has been indicated as an addition to the CTS in Table 4.1-1 Item 21.a. Although this is a change in presentation it does not represent a change in requirements. The design of the ANO-1 ESAS instrument channels is such that the same three transmitters provide input to both the High and the High-High RB pressure functions. Because the indications available for the performance of the required CHANNEL CHECKS are shared by both the High and the High-High RB pressure functions, one performance of this check is sufficient for both functions. The additional CHANNEL CHECK requirement was indicated in the CTS to provide a more complete cross-reference to the ITS requirements. This change provides requirements consistent with NUREG-1430 both in presentation and in content.

A12 The allowance provided in CTS 3.5.3 to bypass the High Reactor Building Pressure and Low Reactor Coolant System Pressure Functional Units during reactor building leak rate tests is omitted. The revised Applicabilities for these Functions (see DOC L1) do not require them to be OPERABLE during the leak rate testing. Therefore, this change is considered administrative.

ANO-385 A13 Not used.

A14 CTS 4.1.c is omitted since it duplicates requirements provided in the regulations, i.e., 10 CFR 50, Appendix B, criteria XI, XVI, and XVII. Such duplication is unnecessary and results in additional administrative burden to revise the duplicate TS when these regulations are revised. Since removal of the duplication results in no actual change in the requirements, removal of the duplicative information is considered an administrative change. Further, changes to the requirements are controlled by the NRC. This change is consistent with NUREG-1430.

TECHNICAL CHANGE -- MORE RESTRICTIVE

M1 Not used.

M2 CTS Table 3.5.1-1 Note 8 provides action requirements in the event any portion of an ESAS digital subsystem is inoperable. This action requirement is referenced from CTS Table 3.5.1-1 although no specific LCO requirement is provided. CTS Table 3.5.1-1 Note 8 indicates that the safety features associated with an inoperable ESAS digital subsystem are to be considered inoperable and that CTS 3.3 applies. It does not however, specify a Completion Time for this action requirement. ITS 3.3.7 Required Action A.2 and its associated Completion Time are adopted to replace the requirements of CTS 3.5.1-1 Note 8. The adoption of the 1 hour Completion Time provides more restrictive, but appropriate, requirements in that no time period for the performance of this action was specified in CTS. This change is consistent with NUREG-1430.

M3 CTS Table 3.5.1-1 Note 6 provides an allowance for continued operation by tripping an inoperable channel and reducing the 2 out of 3 logic to 1 out of the remaining 2 channels. However, no time is specified to complete this action. Therefore, Note 1 is applicable until the inoperable channel is tripped. Note 1 requires the unit to be in hot shutdown within 12 hours. Therefore, the unit essentially has 12 hours to trip the inoperable channel (and restore compliance) or be in MODE 3. ITS 3.3.5 Required Actions A.1 and B.1 will provide only one hour to trip the channel or be in MODE 3 within an additional 6 hours (see also DOC M5). This change represents more restrictive requirements in that ITS 3.3.5 Required Actions A.1 and B.1 specify 7 hours before the unit must be in MODE 3 where CTS allows 12 hours (if the channel is not placed in the tripped condition). Further, the 1 hour Completion Time to place the channel in a tripped condition is not specified in CTS and also represents a more restrictive requirement. This change provides an appropriate Completion Time for this Required Action consistent with NUREG-1430.

M4 CTS Table 3.5.1-1 Note 5 has been replaced by ITS 3.3.5 Required Action B.2.2 and ITS 3.3.6 Required Action B.2. CTS Table 3.5.1-1 Note 5, in conjunction with CTS Table 3.5.1-1 Note 1, provides a total time of 84 hours, from failure to meet the LCO, to enter cold shutdown (MODE 5). ITS 3.3.5 Required Action B.2.2 and ITS 3.3.6 Required Action B.2 will require entry into MODE 5 within 36 hours of failure to meet the LCO. These more restrictive requirements minimize the time during which the safety function is degraded while providing sufficient time to accomplish an orderly shutdown. Additionally, this Completion Time is consistent with NUREG-1430.

M5 CTS Table 3.5.1-1 Note 1 has been replaced by ITS 3.3.5 Required Action B.1 and ITS 3.3.6 Required Action B.1. CTS Table 3.5.1-1 Note 1 provides a time of 12 hours, from failure to meet the LCO, to enter hot shutdown (MODE 3). ITS 3.3.5 Required Action B.1 and ITS 3.3.6 Required Action B.1 will require entry into MODE 3 within 6 hours of failure to meet the LCO. These more restrictive requirements minimize the time during which the safety function is degraded while providing sufficient time to accomplish an orderly shutdown. Additionally, this Completion Time is consistent with NUREG-1430.

TECHNICAL CHANGE -- LESS RESTRICTIVE

L1 Specific Applicability statements for each of the Parameters in ITS Table 3.3.5-1 have been adopted. An Applicability exists in CTS only as implied by the appropriate action requirements which are CTS Table 3.5.1-1 Notes 1 and 5. These requirements would result in the unit being placed in cold shutdown (MODE 5) if any of the ESAS instrumentation Parameters contained more than one inoperable channel. The adoption of the specific ITS Applicability statements is less restrictive in that the Reactor Coolant System Pressure-Low Setpoint Parameter instrument channels will only be required OPERABLE when RCS pressure is above 1750 psig. This specific Applicability is consistent with the design of the ESAS, which provides the capability of bypassing this function when RCS pressure is reduced below 1750 psig (with some margin for instrumentation capabilities) and automatically removing this bypass when pressure is raised back above setpoint (CTS 3.5.3, Note **). Failure of the automatic bypass removal feature or the inability to bypass the RCS pressure function when below 1750 psig does not constitute channel inoperability. However, a channel that remains bypassed when pressure is raised above 1750 psig will be considered inoperable and appropriate conditions will be entered. Because the automatic bypass feature provides no safety function, a discussion of its purpose and relationship to channel operability has been included in the Bases.

3.3.5-02

Additionally, ITS 3.3.5 Required Action B.2.1 along with its Note and the Note modifying Required Action B.2.2 have been adopted. This change provides action requirements to remove the unit from the Applicability of the LCO.

These changes have been made to provide requirements appropriate for the design and licensing basis for the unit. Additionally, this Completion Time is consistent with NUREG-1430.

L2 CTS Table 3.5.1-1 Note 8 indicated that if any one component of an ESAS digital subsystem is inoperable then the entire subsystem is inoperable. The design of the digital subsystems of the ESAS is such that there are five actuation logic channels contained in each of the two digital subsystems. A failure which renders one actuation logic channel inoperable may or may not affect any other of the actuation logic channels contained within that digital subsystem. As a result, the requirement to declare equipment inoperable while it is fully capable of performing its design function is inconsistent with both the CTS and ITS definitions of OPERABLE-OPERABILITY. The requirements of CTS Table 3.5.1-1 Note 8 are replaced by the ACTIONS of ITS 3.3.7.

L3 NUREG-1430 3.3.7 Required Action A.1 and its associated Completion Time have been adopted in the ITS. This Required Action allows equipment associated with an inoperable ESAS Actuation Logic Channel to be placed in its actuated state. This is an alternative to Required Action A.2, and CTS Table 3.5.1-1 Note 8, which would require declaring the equipment inoperable and entering the associated Required Actions for that equipment. This change allows additional flexibility in unit operation by not requiring the performance of the Required Actions for equipment made inoperable by the inoperability of an ESAS Actuation Logic Channel. This change provides requirements consistent with NUREG-1430 and which maintain the safety function of the equipment associated with the ESAS Actuation Logic Channels.

L4 NUREG-1430 3.3.6 Required Action A.1 and its associated Completion Time have been adopted in the ITS. This change establishes a 72 hour period of time in which the unit may continue operation, with one or more ESAS Functions having one channel of the manual initiation feature inoperable, prior to entering an ACTION which results in the unit entering MODE 3. This change has been made to provide ACTION requirements consistent with the safety function of the system, considering the allowed outage time for the actuated system. Additionally, this change is consistent with NUREG-1430.

L5 The Applicability statements of ITS 3.3.6 and 3.3.7 have been adopted. The Applicability for requirements related to these instrument channels was established, in CTS, only by the action requirements of CTS Table 3.5.1-1 Notes 1 and 5. These Notes could have resulted in the unit being placed in cold shutdown (MODE 5). Adoption of the ITS Applicabilities will require OPERABILITY of this instrumentation only during the MODES in which its actuated equipment is required to be OPERABLE. This change is consistent with the philosophy of the NUREG and with the requirements of NUREG-1430 as modified to accommodate the specific Applicabilities of the actuated equipment.

L6 Not used.

L7 CTS Table 4.1-1, items 15.a and 17.a require monthly testing of the HPI and LPI analog channels which are initiated by RCS pressure. CTS Note (1) on each of these two items indicates that the channel is tested "including test of shutdown bypass function (ECCS bypass function)." This Note and its requirements are omitted in ITS 3.3.5. The bypass provides for operational flexibility only by preventing the actuation of ECCS during a shutdown. This bypass provides no safety function in that if the channel does not provide the intended bypass, the system can still perform its required actuations. If the ESAS is somehow prevented from actuation of the required components by the bypass, the channel is inoperable and the unit cannot enter the Applicable conditions for ITS 3.3.5.

CTS DISCUSSION OF CHANGES

The Bases for NUREG 3.3.5, LCO section, state: "Failure of a bypass bistable or bypass circuitry, such that a trip channel cannot be bypassed, does not render the channel inoperable." This is acceptable only if the bypass performs no safety function. Further, for this to be true, the bypass is not required to be tested with the CHANNEL FUNCTIONAL TEST, since if it were included, and it failed, the SR would be failed. Pursuant to SR 3.0.1, with a failed SR, the LCO would not be met, i.e., the channel would be inoperable. Since the Bases clearly indicate the channel is not inoperable, the bypass must not be a required function, and therefore, is not included in the SR.

LESS RESTRICTIVE -- ADMINISTRATIVE DELETION OF REQUIREMENTS

LA1 This information has been moved to the Bases. This information provides details of design or process which are not directly pertinent to the actual requirement, i.e., Definition, Limiting Condition for Operation or Surveillance Requirement, but rather describe an acceptable method of compliance. Since these details are not necessary to adequately describe the actual regulatory requirement, they can be moved to a licensee controlled document without a significant impact on safety. Placing these details in controlled documents provides adequate assurance that they will be maintained. The Bases will be controlled by the Bases Control Process in Section 5 of the proposed Technical Specifications. This change is consistent with NUREG-1430.

CTS Location	New Location
Table 3.5.1-1 Column 1 "Number of Channels"	Bases 3.3.5, LCO
Table 3.5.1-1 Column 2 "No. of Channels for System Trip"	Bases 3.3.5, BACKGROUND
3.5.3	Bases 3.3.5, BACKGROUND

LA2 The information provided in Table 4.1-1, Item 20, Note (1) has been moved to the Bases of ITS 3.3.7, which describe the RB Spray system and its automatic actuation. This information provides details of design or process which are not directly pertinent to the actual requirement, i.e., Surveillance Requirement, but rather only further describe the required equipment. Since these details are not necessary to adequately describe the actual regulatory requirement, they can be moved to a licensee controlled document without a significant impact on safety. Placing these details in controlled documents provides adequate assurance that they will be maintained. The Bases will be controlled by the Bases Control Process in Section 5 of the proposed Technical Specifications. This change is consistent with NUREG-1430.

ANO-418 LA3 CTS Table 4.1-1 Item 38 lists a surveillance requirement to calibrate the sodium hydroxide tank level instrumentation. This instrumentation is not associated with any interlock or automatic actuation required to prevent an accident from initiating or to mitigate an accident in progress. The indication-only instrumentation provides a means for operators to verify the assumed pre-accident volume in the sodium hydroxide tank during normal operations. The TS requirement for sodium hydroxide tank level is retained in the ITS and is unaffected by the proposed relocation of the instrumentation surveillance requirement. Since this instrumentation provides an indication-only function, it is acceptable to relocate the associated requirements to the TRM.

A8 A Note is incorporated into the ITS that is not in the CTS. The ITS 3.3.8 ACTIONS Note provides for separate entry into the ACTIONS for each Function. This is consistent with the CTS in that each CTS function was also considered separately (see Table 3.5.1-1, items 8a and 8b). Separate ACTIONS is therefore consistent with the CTS and the NUREG, and the addition of the Note is for clarity in application only.

A9 Specific Applicability requirements are included for ITS 3.3.8. These are included consistent with the CTS requirements which are not explicitly identified, but considered to be MODES 1, 2, 3, and 4 since the Actions provided by CTS Table 3.5.1-1, Note 14, require the unit to be placed in cold shutdown (ITS MODE 5) when the DG LOPS function is not OPERABLE. There are no additional restrictions once the unit is in cold shutdown or refueling. Further, events occurring in these MODES are slowly evolving events which provide time for operator action to start the DG when required, and such starts are not required by the ANO-1 safety analyses.

A10 The Applicability of the Degraded Voltage Monitoring (DG LOPS) Specifications in CTS Table 3.5.1-1, Other #8, as applied at ANO-1 is above Cold Shutdown. Due to the way requirements are presented in CTS Table 3.5.1-1, the Applicability is often not specifically stated. In the case of Degraded Voltage Monitoring instrumentation, it is considered to be required above Cold Shutdown which is consistent with the CTS Applicability for OPERABILITY of the DGs. This is consistent with CTS Table 3.5.1-1, Note 14, which requires the unit to be placed in cold shutdown (ITS MODE 5) when the DG LOPS function is not OPERABLE. There are no additional restrictions once the unit is in cold shutdown or refueling. Events occurring in MODES 5 & 6 are slowly evolving events which provide time for operator action to start the DG when required, and such starts are not required by the ANO-1 safety analyses.

A11 Not used.

A12 Not used.

A13 Not used.

A14 CTS 4.1.c is omitted since it duplicates requirements provided in the regulations, i.e., 10CFR Part 50, Appendix B, criteria XI, XVI, & XVII. Such duplication is unnecessary and results in additional administrative burden to revise the duplicate TS when these regulations are revised. Since removal of the duplication results in no actual change in the requirements, removal of the duplicative information is considered an administrative change. Further, changes to the requirements are controlled by the NRC. This change is consistent with NUREG-1430.

ANO-386 A15 Not used.

LESS RESTRICTIVE -- ADMINISTRATIVE DELETION OF REQUIREMENTS

LA1 This information has been moved to the Bases. This information provides details of design or process which are not directly pertinent to the actual requirement, i.e., Definition, Limiting Condition for Operation or Surveillance Requirement, but rather describe an acceptable method of compliance. Since these details are not necessary to adequately describe the actual regulatory requirement, they can be moved to a licensee controlled document without a significant impact on safety. Placing these details in controlled documents provides adequate assurance that they will be maintained. The Bases will be controlled by the Bases Control Process in Chapter 5 of the proposed Technical Specifications. This change is consistent with NUREG-1430.

	CTS Location	New Location
	3.5.1.12	Bases 3.3.15, LCO
	Table 3.5.1-1, Columns 1 and 2 for the following parameters:	
	ESAS #1a & 2a	Bases 3.3.15, LCO
	EFIC #1b & 1c	Bases 3.3.15, LCO
3.3.8-02	OTHER #2 & #3	Bases 3.3.15, LCO
	OTHER #8a (with Note *)	Bases 3.3.8, BACKGROUND
	OTHER #10, 11, & 12	Bases 3.3.15, LCO
	OTHER #13	Bases 3.3.15, LCO
	OTHER #15 & 16	Bases 3.3.15, LCO
ANO-390	OTHER #14	Bases 3.3.16, BACKGROUND
	Table 3.5.1-1, Note 13	Bases 3.3.8, LCO
	Table 3.5.1-1, Note 20	Bases 3.3.15, ACTIONS
	Table 3.5.1-1, Note 28.b	Bases 3.3.15, ACTIONS
	Table 3.5.1-1, Note 29.b	Bases 3.3.15, ACTIONS
	4.12.2	Bases 3.3.15, SR 3.3.15.2
	6.12.5.b, k, & l	Bases 3.3.15, ACTIONS

ANO-424 LA2 Not used.

CTS DISCUSSION OF CHANGES

ITS Section 3.4A: Reactor Coolant System

Note: The ITS Section 3.4A package includes the following ITS:

ITS 3.4.1	RCS Pressure, Temperature and Flow DNB Limits
ITS 3.4.2	RCS Minimum Temperature for Criticality
ITS 3.4.3	RCS P/T Limits
ITS 3.4.4	RCS Loops - MODE 1 and 2
ITS 3.4.5	RCS Loops - MODE 3
ITS 3.4.6	RCS Loops - MODE 4
ITS 3.4.7	RCS Loops - MODE 5, Loops Filled
ITS 3.4.8	RCS Loops - MODE 5, Loops Not Filled

which address the corresponding NUREG-1430 RSTS.

ADMINISTRATIVE

A1 The designated change represents a non-technical, non-intent change to the Arkansas Nuclear One, Unit 1 Current Technical Specifications (CTS) made to make the ANO-1 Improved Technical Specifications (ITS) consistent with the Babcock and Wilcox (B&W) revised Standard Technical Specification (RSTS), NUREG-1430, Revision 1. This change does not alter the requirements of the CTS or RSTS. Examples of this type of change include: wording preference; convention adoption; editorial, numbering and formatting changes; and hierarchy structure.

A2 The ANO-1 CTS Bases will be administratively deleted in their entirety in favor of the NUREG-1430 Bases. The CTS Bases will be reviewed for technical content that will be identified for retention in the ITS Bases.

A3 The CTS 3.1.1.1.B requirements for coolant circulation when boron concentration is being reduced are presumed to be "at all times" since no applicable conditions are identified. These requirements are fulfilled in ITS LCO 3.4.4 for MODES 1 and 2, LCO 3.4.5 for MODE 3, LCO 3.4.6 for MODES 4 and 5 , and LCO 3.9.1, LCO 3.9.4 and LCO 3.9.5 for MODE 6. However, the Actions identified in CTS 3.1.1.1.B are not considered to be applicable in MODES 1 and 2 (i.e., for LCO 3.4.4) since complete loss of flow will result in a reactor trip and placing the unit in MODE 3. The Actions for MODE 6 are addressed in the ITS Section 3.9 Discussions of Change.

A4 The CTS 3.1.1.5.A requirements for OPERABILITY of RCS loops is identified as applicable "with the reactor coolant average temperature above 280 F." These requirements are fulfilled in ITS LCO 3.4.4 and LCO 3.4.5. However, the Actions identified in CTS 3.1.1.5 are not considered to be applicable in MODES 1 and 2 (i.e., for LCO 3.4.4) since complete loss of flow in one loop will result in a reactor trip and placing the unit in MODE 3.

A5 The CTS 3.1.1.6.A requirement to be in COLD SHUTDOWN in 20 hours is not reflected in ITS 3.4.7 or ITS 3.4.8 since the unit is already in MODE 5.

A6 The CTS 3.1.2.1 statement that "The provisions of Specifications 3.0.3 are not applicable" is not required to be reflected in ITS LCO 3.4.3 since the ACTIONS provided address all possible conditions in MODES 1, 2, 3, and 4, and ITS LCO 3.0.3 is only applicable in these MODES.

A7 The CTS 3.1.2.6 requirement to place the unit in cold shutdown "while maintaining RCS temperature and pressure below the curve" is identified in ITS only as "be in MODE 5." The specifics of meeting the requirements while shutting down are not reflected since these are included in the LCO and are always understood to be required. If the requirements of the LCO can be met, they are required, and if they cannot be met (i.e., compliance is not restored as required by Required Action A.1), the shutdown to MODE 5 is still required. Therefore, this is considered an administrative change due only to application and format consistent with NUREG-1430.

A8 The "above 525°F" requirement for a minimum condition for criticality in CTS 3.1.3.1 has been revised to ≥ 525°F in ITS 3.4.2. These are considered to be essentially equivalent since the parameter can be less than the limit, but be so close as to be imperceptible. This change is consistent with design basis and with NUREG-1430.

A9 The "restore... to within the limit" requirement of CTS 3.1.3.7 is not retained in ITS. Since restoration of compliance is always an option, it is not necessary to specifically identify this action. This is considered an administrative change due only to application and format consistent with NUREG-1430.

A10 Not used.

A11 CTS 3.1.2.2 requires compliance with requirements which are already in effect and otherwise applicable. . Such duplication is unnecessary and results in additional administrative burden to revise the duplicate TS when these regulations are revised. Since removal of the duplication results in no actual change in the requirements, removal of the duplicative information is considered an administrative change. This change is consistent with NUREG-1430.

A12 CTS 3.1.1.6 provides requirements for "with the reactor coolant average temperature at or below 280°F, but the reactor above the refueling shutdown condition." In ITS, these operating conditions are presented as MODES 4 and 5, and are split into three Specifications for MODE 4, MODE 5 with the loops filled, and MODE 5 with the loops not filled. This change is consistent with NUREG-1430.

A13 Not used

A14 The allowance of CTS 3.1.1.6 Note * to "de-energize" the reactor coolant pump(s) and decay heat removal pump(s) is revised to allow the pumps to be "removed from operation." This allowance more closely matches the requirement for the pump(s) to be "in operation" and is consistent with the wording of a similar Note in NUREG-1430 LCO 3.9.4. Since there is no change in intent or application, this change is considered administrative.

A15 An Applicability of "at all times" is included in ITS 3.4.3. CTS 3.1.2 provides similar requirements but does not clearly specify the Applicability except as during heatup, during cooldown, or during hydro tests. Since the ITS SR Notes provide the same limitations for each of the various limits, this addition of the Applicability is considered an administrative change to accommodate format.

A16 The CTS 3.1.2.3 and 3.1.3.2 limitation for the RCS temperature to be to the right of the criticality curve is revised to be applicable only during the physics testing allowed under CTS 3.1.3.1 (ITS 3.1.9). If not performing physics testing, the minimum temperature for criticality (525°F as required by ITS LCO 3.4.2) is well above the required temperatures on the pressure/temperature limits curve. Therefore, if above the normal RCS temperature limits of 530°F for performing a frequent (i.e., every 30 minutes) Surveillance of RCS temperature, there is also no need to require the performance of a Surveillance with lower limits.

A17 CTS 3.1.1.1.A does not provide required actions for noncompliance. Therefore, the appropriate actions were provided by CTS 3.0.3 which would require that the unit be placed in a mode for which the requirement does not apply. This is the same action as will be required by ITS Required Action B.1. Therefore, this change is considered to be administrative in nature.

ANO-435 A18 Not used.

TECHNICAL CHANGE -- MORE RESTRICTIVE

M1 The CTS 3.1.1.1.A and Table 2.3-1, Note (d), limitation of 24 hours with only two operating reactor coolant pumps is converted to a Required Action with an explicit time frame to restore a third operating pump. Also, a default Required Action is included to clarify the specific action required if Condition A is not met. The proposed Completion Time for restoration of a third pump (Required Action A.1) and exiting the applicable conditions (Required Action B.1) provide for appropriate and prompt compensatory actions, while allowing sufficient time to accomplish the activities required in an orderly manner and without challenging safety systems. Further, the combined Completion Times (18 hrs + 6 hrs) are consistent with CTS allowance for continued critical operation limited to 24 hours. However, the additional detail and intermediate requirements are an additional restriction on unit operation.

Additionally, the CTS applicable conditions of "when the reactor is critical" are revised to include ITS MODES 1 and 2. These Applicability's are essentially the same except that ITS MODE 2 also includes a condition of $k_{eff} < 1.0$ but ≥ 0.99. This addition results in no practical change since the conditions are not readily differentiated in the control room. This is considered to be a minor additional restriction on unit operation consistent with NUREG-1430.

M2 CTS 3.1.2.2 provides a cross reference to identify that when the leak tests required by CTS 4.3 are conducted, they must be conducted under the provision of CTS 3.1.2.3, and identifies that the provisions of CTS 3.0.3 are not applicable. In the ITS, this exception to LCO 3.0.3 is not retained since it is not expected to be needed and would probably be moot for most situations that would cause failure of the leak test. Regardless, the allowance is removed, and is considered to be a minor additional restriction on unit operation consistent with NUREG-1430.

M3 Appropriate Surveillance Requirements are included with ITS LCO 3.4.4 and LCO 3.4.5. These SRs require verification that the required RCS loops are in operation in MODE 1 and 2 (SR 3.4.4.1) and verification that the required RCS loop is in operation in MODE 3 (SR 3.4.5.1). These SRs are an additional restriction on unit operation consistent with NUREG-1430.

M4 The CTS 3.1.1.6 requirements allow for any two of the four identified heat removal
3.4A-12 loops to be used in MODES 4 and 5. ITS 3.4.7 will require that both steam generators be OPERABLE if only one DHR system is OPERABLE. Requiring both SGs to be OPERABLE when only one DHR system is OPERABLE is an additional restriction on unit operation consistent with NUREG-1430.

M5 A specific Completion Time is provided for completing the evaluation of the impact of the out-of-limit condition on the fracture toughness properties of the RCS and determining that the RCS remains acceptable for continued operation. CTS 3.1.2.6 contains no such Completion Time but requires only that the evaluation be done. The proposed Completion Time of 72 hours is considered reasonable for operation in MODES 1, 2, 3, and 4, because the limits represent controls on long term vessel fatigue and usage factors, and short periods (i.e., ≤ 30 minutes) of noncompliance with the limits are not expected to present an immediate threat to the RCS integrity. In other conditions (i.e., MODES 5 and 6, and defueled), the proposed Required Action and associated Completion Time would prevent entry into MODE 4 which is consistent with CTS LCO 3.0.4. Additionally, Notes are provided in proposed Conditions A and C to require the evaluation to be completed even if compliance with the limits is restored. Therefore, this change is an additional restriction on unit operation consistent with NUREG-1430.

M6 The CTS 3.1.2.6 and CTS 3.1.6.7 requirements that the unit be placed in HOT STANDBY within the next 6 hours (if the evaluation does not determine the RCS to be acceptable) is revised to require the unit to be placed in ITS MODE 3. Since the CTS HOT STANDBY requires the unit to be ≤ 2% RTP and ITS MODE 3 is a subcritical condition, this change is an additional restriction on unit operation. The activity to reduce the unit by an additional 2% RTP is a minimal change in operation which provides consistency within the ITS for shutdown applications. The change is of little consequence since the unit evaluation will generally require a significant effort prior to restart and the unit must be placed in COLD SHUTDOWN (ITS MODE 5) within an additional 30 hours. This change is consistent with NUREG-1430.

M7 Specific Surveillance Requirements (SR 3.4.3.1, SR 3.4.3.2, SR 3.4.3.3, and SR 3.4.3.4) are provided for verifying the RCS pressure and temperature limits during heatup and cooldown. These requirements provide a specific Frequency which is not included in CTS 3.1.2. This change is an additional restriction on unit operation consistent with NUREG-1430.

M8 CTS 3.1.3.7 is revised to treat the pressure and temperature limits for criticality just as any other pressure and temperature limit in ITS 3.4.3. The revisions include additional Required Actions to perform the evaluation of the RCS to determine that it is acceptable for continued operation and to place the unit in MODE 5 if the evaluation is not acceptable. This change is an additional restriction on unit operation consistent with NUREG-1430.

M9 CTS 3.4.1 requires two steam generators be capable of removing heat for operation above 280°F. CTS 3.4.2 provides the Actions if Specification 3.4.1 is not met and actually allows the steam generators to be removed from service for up to 24 hours before requiring the unit to be in hot shutdown within the next 12 hours. ITS does not allow operation in MODES 1, 2, and 3 without both steam generators OPERABLE. ITS LCO 3.4.4, Condition B, will require the unit, if in MODES 1 or 2, to be in MODE 3 within 6 hours. This is necessary since such operation of the unit would be significantly outside the initial conditions of the safety analysis. This is an additional restriction on unit operation. (See also DOC L6.)

M10 The CTS does not include Reactor Coolant System (RCS) pressure, temperature, or flow departure from nucleate boiling (DNB) limits. The RSTS LCO 3.4.1 requirements for DNB limits are being incorporated into the unit specific ITS. These limits on RCS pressure, temperature, and flow rate are provided "to ensure that the core operates within the limits assumed for the plant safety analyses." Operating within these limits will result in meeting departure from nucleate boiling ratio (DNBR) criteria in the event of a DNB limited transient. Similar criteria are used to determine the Reactor Protection System (RPS) trip setpoints based on pressure, temperature and flow; however, the RPS trip setpoints are designed to assure the unit does not exceed a safety limit, rather than DNBR criteria. These limits are an additional restriction on the operation of the unit based on NUREG-1430.

M11 The Applicability for ITS 3.4.2 is taken from CTS 3.1.3, Minimum Conditions for Criticality. However, the Applicability is given as including all of MODES 1 and 2, rather than MODE 1 and MODE 2 with $k_{eff} \geq 1.0$. This is consistent with the action requirements of CTS 3.1.3.7 which require the unit to be placed in Hot Shutdown (MODE 3), with past practice, and with the unit control rod ejection analysis which is performed for full power and zero power conditions, and evaluated to bound the event should it occur in MODE 2 with $k_{eff} < 1.0$ (see SAR Section 14.2.2.4.1.1).

M12 An additional restriction is added to the allowance for de-energizing the DHR loops during MODE 5 with the loops not filled, as provided by CTS 3.1.1.6. This additional restriction precludes draining operations to further reduce the RCS water volume with no forced flow from a DHR pump, and significantly reduces the probability of a loss of decay heat removal event. Since this not a CTS restriction for pump de-energization, this is an additional restriction on unit operation consistent with NUREG-1430.

M13 New Surveillance Requirements (ITS SR 3.4.7.3 and SR 3.4.8.2) are added to periodically verify the additional loop is ready to be placed in operation if required. This change is an additional restriction on unit operation consistent with NUREG-1430.

M14 A new Surveillance Requirement (SR 3.4.2.1) is included to periodically verify compliance with the requirements of CTS 3.1.3 (ITS 3.4.2). This SR provides frequent verification of compliance during operation. This change is an additional restriction on unit operation consistent with NUREG-1430 as modified by Generic Traveler TSTF-027, Rev. 1.

3.4A-09 M15 Not used.

3.4A-10 M16 An additional restriction (ITS 3.4.8, Required Action B.2) is incorporated to "suspend all operations involving reduction in RCS water volume" with both DHR loops inoperable or both required DHR pumps are not in operation when they are required to be. This is consistent with the requirements for no reduction in water volume while intentionally removing both DHR pumps from operation as allowed by ITS 3.4.8, Note 1, part b. This change adds a requirement which is not included in either the CTS or NUREG-1430.

TECHNICAL CHANGE -- LESS RESTRICTIVE

L1 The CTS 3.1.1.6 actions for an inoperable coolant loop in MODES 4 and 5 have been revised to allow an additional 4 hours before requiring the unit to be in COLD SHUTDOWN (MODE 5) if a decay heat removal system loop is OPERABLE. The 24 hours is reasonable based on operating experience to reach MODE 5 in an orderly manner and without challenging unit systems. The actions are also revised to omit the requirement to be in MODE 5 in 20 hours if the only OPERABLE coolant loop is an RCS loop. A single RCS loop may not be able to remove sufficient heat to reduce the RCS temperature to MODE 5 conditions, or at best will require an extended duration to reach MODE 5. Therefore, the actions are concentrated on restoration of a DHR loop, rather than attempting to cooldown to MODE 5. These proposed Required Actions are consistent with NUREG-1430.

L2 The CTS 3.1.1.6 requirements allow for OPERABLE RCS loops to provide the required cooling during operation at or below 280°F but above the refueling shutdown condition (i.e., ITS MODES 4 and 5). However, CTS 3.1.1.6 requires the RCS loop to include the steam generator and at least one associated reactor coolant pump. The ANO application of these requirements do not currently provide for use of the RCS loops in MODE 5 since the steam generator is not capable of providing the necessary cooling; therefore, it is not considered OPERABLE. However, with sufficient water available to the SG secondary side (ITS LCO 3.4.7 and SR 3.4.7.2), the steam generator(s) provide an acceptable backup method of decay heat removal without an operating reactor coolant pump. (Also see DOC M4.) This change is consistent with NUREG-1430.

3.4A-13 In addition, When in cold shutdown with loops not filled (ITS Mode 5 with loops not filled) The RCS loop is not currently considered to be OPERABLE because CTS 3.1.1.6 requires a reactor coolant pump in order to credit the RCS loop and in this condition, loops drained, the reactor coolant pump may not have sufficient fluid for net positive suction head. Therefore, ITS 3.4.8 is considered to be a relaxation of the CTS requirements since the ANO interpretation of 3.1.1.6 would require an OPERABLE reactor coolant pump in order to credit an RCS loop. This change is consistent with NUREG-1430.

L3 The CTS 3.1.1.6 requirements for an operating heat removal loop in MODE 5 are revised to allow one of the required decay heat removal loops to be de-energized for ≤ 2 hours for surveillance testing, and both decay heat removal loops to be removed from operation if both loops are filled and one RCS loop is in operation for heatup into MODE 4. These Notes (ITS LCO 3.4.7, Notes 2 & 3, and LCO 3.4.8, Note 2) are acceptable since the additional restrictions on application of the allowance provided by these Notes provide for sufficient decay heat removal. This change is consistent with NUREG-1430.

L4 CTS 3.1.1.6 Note * part (2) requirements for an operating heat removal loop in MODE 5 are not included in ITS 3.4.8 Note 1. The allowance for both of the required decay heat removal loops to be removed from operation for ≤ 1 hour is retained provided no operations are permitted that would cause a reduction of the RCS boron concentration, and no draining operations to further reduce the RCS water volume are permitted. The CTS Note requires that the core outlet temperature is maintained at least 10°F below saturation temperature. However, as indicated in the Bases for ITS 3.4.7, this restriction is intended to assure the capability for natural circulation which is not available in the conditions for which ITS 3.4.8 is applicable, i.e., MODE 5 with loops not filled. Therefore, this restriction is unnecessary. This change is consistent with NUREG-1430.

L5 The CTS 3.1.3.7 requirements to "restore..." in 15 minutes or be in "at least hot shutdown" within the next 15 minutes when CTS 3.1.3.2 is not met are revised, in ITS 3.4.3, to require the unit to "restore" in 30 minutes or be in MODE 3 within the next 6 hours. These revised Completion Times are considered to be appropriate for the Required Actions, allowing the activity to be accomplished in a controlled, orderly manner without challenging plant systems. The proposed changes are consistent with NUREG-1430.

L6 CTS 3.4.1 requires two steam generators be capable of removing heat for operation above 280°F. CTS 3.4.2 provides the Actions if Specification 3.4.1 is not met and actually allows the steam generators to be removed from service for up to 24 hours before requiring the unit to be in hot shutdown within the next 12 hours. ITS does not allow operation in MODES 1, 2, and 3 without both steam generators OPERABLE. If the unit is in MODE 3, ITS LCO 3.4.5, Condition A, will allow 72 hours prior to requiring the unit to placed in MODE 4. CTS allowed only 48 hours of operation in hot shutdown (ITS MODE 3) prior to requiring the unit to be placed in cold shutdown (ITS MODE 5). Further, ITS LCO 3.4.5, Condition B requires only that the unit be placed in MODE 4 consistent with the Applicability of both the CTS and ITS. (See also DOC M9.)

L7 CTS 3.1.1.5.B requires one reactor coolant loop to be operating during the equivalent
3.4A-09 of ITS MODE 3 operation, and if not met, that immediate corrective action be initiated
3.4A-10 to return the required loop to operation. This CTS requirement is revised for ITS 3.4.5 to allow both reactor coolant loops to be removed from operation provided specific conditions are met, i.e., no operations are permitted that would cause introduction into the RCS, coolant with a boron concentration less than required to meet the SDM of LCO 3.1.1, and core outlet temperature is maintained 10°F below saturation temperature to assure subcooling capability. In addition, this allowance may be used only for limited periods of time. All RCPs may be removed from operation during transition to and from the DHR system for up to 8 hours in any 24 hour period, or otherwise for up to 1 hour during any 8 hour period for any other reason. The allowance is acceptable since the allowance is for a limited time and additional restrictions on application of the allowance provided by the Note provides for sufficient decay heat removal and SDM.

L8 CTS 4.27.3 requires steam generator OPERABILITY to be based on secondary side water level for each required steam generator. The CTS requires steam generators to be OPERABLE "whenever the reactor coolant average temperature is above 280°F" (CTS 3.1.1.2.A), and allows "whenever the reactor coolant average temperature is at or below 280°F, but the reactor above the refueling shutdown condition," a steam generator to be used to fulfill the requirement for decay heat removal. CTS 4.27.3 is applicable for either condition and requires the steam generator secondary side water level to be ≥ 20 inches on the startup range. In MODES 1, 2, 3, and 4, the capability for circulation is typically provided by either the reactor coolant pumps or the decay heat removal pumps, and adequate heat removal can be accomplished with < 20 inches of secondary side water level. Further, the minimum level is not required for decay heat removal via the steam generators in MODES 1, 2, 3, and 4, as long as emergency feedwater (EFW) is provided by the motor driven EFW pump. LCO 3.7.5 requires that the EFW System be OPERABLE to provide this feedwater in MODES 1, 2, and 3, and in MODE 4 when the steam generator is relied upon for heat removal. Therefore, there is no need to require a minimum secondary side water level in the steam generators in MODES 1, 2, 3, or 4.

ANO-423 L9 Not used.

ANO-423 L10 Not used.

L11 The requirements of CTS 3.1.1.1.B, 3.1.1.5.B, 3.1.1.6.B and the footnote associated with 3.1.1.6 are revised to allow operations that may result in a limited addition of positive reactivity in the event forced coolant flow is not available. During these conditions, various unit operations must be continued. RCS inventory must be maintained, and RCS temperature must be controlled. These activities necessarily involve additions to the RCS of cooler water (a positive reactivity effect in most cases) and may involve inventory makeup from sources that are at boron concentrations that are less than the RCS boron concentration. The addition of this allowance (LCO 3.4.5 Required Action C.1, LCO 3.4.6 Note a, LCO 3.4.6 Required Action B.1, LCO 3.4.7 Note 1a, LCO 3.4.7 Required Action C.1, LCO 3.4.8 Note 1a, LCO 3.4.8 Required Action B.1) is acceptable, since controls are maintained to provide assurance that the minimum boron concentration, and thus a minimum SDM, is maintained as specified in LCO 3.1.1. This change is consistent with NUREG-1430, as modified by generic change TSTF-286, Rev 2.

ANO-247

LESS RESTRICTIVE -- ADMINISTRATIVE DELETION OF REQUIREMENTS

LA1 This information has been moved to the Bases. This information provides details of design or process which are not directly pertinent to the actual requirement, i.e., Definition, Limiting Condition for Operation or Surveillance Requirement, but rather describe additional unnecessary details such as an acceptable method of compliance. Since these details are not necessary to adequately describe the actual regulatory requirement, they can be moved to a licensee controlled document without a significant impact on safety. Placing these details in controlled documents provides adequate assurance that they will be maintained. The Bases will be controlled by the Bases Control Process in Chapter 5 of the proposed Technical Specifications. This change is consistent with NUREG-1430.

CTS Location	New Location
Table 2.3-1	Bases 3.4.4, BACKGROUND
3.1.1.2.A	Bases 3.4.4, LCO
3.1.1.2.A	Bases 3.4.5, LCO
3.1.1.5.A	Bases 3.4.5, LCO
3.1.1.6	Bases 3.4.6, LCO
3.1.1.6	Bases 3.4.7, LCO
3.1.2.6	Bases 3.4.3, RA A.2
3.1.2.7	Bases 3.4.3, BACKGROUND
3.1.2.8	Bases 3.4.3, BACKGROUND
3.4.1.1	Bases 3.4.4, LCO
3.4.1.1	Bases 3.4.5, LCO

ANO-423 LA2 Not used.

ANO-423 LA3 Not used.

A11 The CTS markup is annotated to show the adoption of Condition C for ITS LCO 3.5.2.
3.5.2-01 This entry condition addresses those situations in which at least 100% of the ECCS flow equivalent to a single OPERABLE ECCS train is not available due to component inoperability that has resulted in one or more ECCS trains being declared inoperable. In this situation, the safety function provided by the ECCS is not capable of being met and the unit is operating outside of its accident analyses. Therefore, LCO 3.0.3 must be entered immediately. This change is classified as administrative because the intent of Condition C is comparable to the requirements of CTS 3.0.3, which would have been entered for this situation.

A12 Units expressed in CTS 3.3.3 were inconsistent in their application of allowances for measurement and instrumentation uncertainties. For example, the CFT required volume and pressure presented in the CTS contained instrumentation uncertainty allowances. The boron concentration presented in the CTS contained no allowances. Therefore, CTS 3.3.3(A) was modified to present the safety analysis values for the CFT tank volume and pressure. This change establishes consistency between parameters presented in the specification. This change is considered to be administrative in that the same instrumentation uncertainty allowances for these parameters will exist in the future.

ANO-432 A13 Not used.

TECHNICAL CHANGE -- MORE RESTRICTIVE

M1 Not used.

M2 ITS 3.5.1, Condition B will establish the Required Actions should a core flood tank (CFT) become inoperable for reasons other than boron concentration not being within its limits. Condition C will establish the Required Actions should the Required Actions and associated Completion Times of Condition A or B not be met. The Completion Time for Required Action B.1, which directs restoration of the CFT to an OPERABLE status, has been specified as being 1 hour. The Completion Time for Required Action C.1, which directs that the unit be placed in MODE 3, has also been specified as being 6 hours from entry into the Condition. In the ITS, this provides a cumulative time frame of 7 hours to be in MODE 3 (for inoperability circumstances other than boron concentration not being within its limits). While in CTS 3.3.6, the cumulative time frame for placing the unit in MODE 3 was 36 hours. The reduced time to place the unit in MODE 3 constitutes a more restrictive requirement.

ANO-413

In addition, the ITS 3.5.1 Completion Time for removing the unit from the Applicability of the LCO will be 12 hours following entry into Condition C. For comparable circumstances, the CTS would have allowed 72 hours to be in cold shutdown. Despite the differences in the final operating condition of the reactor, the ITS will require a faster rate of cooldown to satisfy its Required Action. This also constitutes an additional restriction on the unit.

The adoption of both of these additional restrictions is considered acceptable in light of the importance of the core flood tanks in mitigating the effects of large break LOCAs.

M3 ITS SR 3.5.1.4 Frequency for verification of Core Flood Tank (CFT) boron concentration requires that the CFT be sampled every 31 days which is consistent with sampling requirements per CTS Table 4.1-3, Item 3. In addition, the ITS and CTS require that the CFTs be sampled after inventory additions. The CTS requires sampling "after each makeup," but does not specify a time limit for the sampling. The ITS Frequency will be more restrictive than CTS requirements because sampling will be required "once within 12 hours after each solution level increase ..." This Completion Time is based on the need to clearly establish when the required sampling must be completed while taking into consideration the time necessary to recirculate the tank, obtain the sample and perform the analysis. (Also see DOC L3.) The change is consistent with the intent of NUREG-1430.

L6 ITS 3.5.3 Condition C is shown on the CTS markup as being adopted. Condition C is entered when both of the LPI trains are inoperable. ITS 3.5.3 Required Action C.1 directs that action be immediately initiated to restore at least one LPI train to an operable status. Required Action C.2, however, does not require the unit to be placed in cold shutdown unless at least one of the pumps is restored to an operable status. The current application of CTS requirements would direct action to be initiated to place the unit in an operating condition in which the specification does not apply (Mode 5 equivalent) within a limited period of time even when both LPI trains are inoperable. ITS Condition C will not direct that a reduction in operating temperature (to Mode 5 conditions) be taken until at least one LPI train has been restored to an OPERABLE status, thus ensuring that an effective method of decay heat removal will be available in the lower mode of operation. The imposition of this ITS Condition would be less restrictive based on the CTS requirement to place the unit in cold shutdown without regard for the ability to dissipate decay heat at this lower mode of operation. This change is acceptable because of the ITS direction that action be immediately initiated to restore a safety function (i.e., one train of LPI) while recognizing that it is an inappropriate action to direct that a unit without an OPERABLE decay heat removal system be directed to a mode of operation that relies on the DHR system as the mechanism for decay heat removal. The adoption of this Condition is consistent with NUREG-1430.

ANO-405

L7 ITS 3.5.2 Condition A is entered when one or more ECCS trains are inoperable and at least 100% of the ECCS flow equivalent to a single operable ECCS train is available. Required Action A.1 specifies that the ECCS train be restored to OPERABLE status with a Completion Time of 72 hours. ITS Condition B is entered when the Required Action and associated Completion Time of Condition A have not been met. Required Action B.1 specifies that the unit be placed in MODE 3 with a Completion Time of 6 hours. Cumulatively, under the ITS, the unit has 78 hours to be in MODE 3 (subcritical). CTS 3.3.6 requires that with the requirements for the specified ECCS components not met, a "reactor shutdown shall be initiated and the reactor shall be in hot shutdown condition within 36 hours." Thus, the adoption of the Completion Times in the ITS represent less restrictive requirements than those imposed by the CTS. The increase in the allowed restoration time is acceptable based on the preservation of the ECCS safety function provided by the redundant train and the verification that "at least 100% of the ECCS flow equivalent to a single OPERABLE ECCS train" is available. The adoption of these Completion Times is consistent with NUREG-1366, NUREG-1430 and NRC Memorandum to V. Stello, Jr., from R.L. Baer, "Recommended Interim Revisions to LCOs for ECCS Components," December 1, 1975. (Also reference DOC L9).

ADMINISTRATIVE

A1 The designated change represents a non-technical, non-intent change to the Arkansas Nuclear One, Unit 1 Current Technical Specifications (CTS) made to make the ANO-1 Improved Technical Specifications (ITS) consistent with the B&W Standard Technical Specification, NUREG-1430, Revision 1. This change does not alter the requirements of the CTS or the NUREG. Examples of this type of change include: wording preference; convention adoption; editorial, numbering and formatting changes; and hierarchy structure.

A2 The ANO-1 CTS Bases will be administratively deleted in their entirety in favor of the NUREG-1430 Bases. The CTS Bases will be reviewed for technical content that will be identified for retention in the ITS Bases.

A3 CTS 3.6.3 prohibits changing unit status where the reactor is made subcritical by less than 1% $\Delta k/k$ without reactor building (RB) integrity. This unit status is identified as ITS MODE 2 and is a Condition for which the RB is required OPERABLE.
ITS LCO 3.0.4 adequately controls compliance with conditions required to be met for MODE changes. Therefore, CTS 3.6.3 is redundant and may be administratively deleted.

A4 Not used.

A5 CTS 3.6.6 is not specifically identified as applicable to reactor building (RB) penetrations with two (2) valves; however, testing and closure of the 'other' valve is discussed which implies that this was the intent. The NUREG 3.6.3 Condition A Note about applicability to systems with two RB isolation valves is explicit and is adopted as an administrative change in the ITS consistent with NUREG-1430.

3.6.3-8 With 2 valves in one penetration inoperable, CTS 3.6.6 cannot be met (other valve not operable). Therefore, CTS 3.6.1 is entered. This is equivalent to NUREG 3.6.3 Conditions B and D. Therefore, these requirements are adopted in the ITS as an administrative change consistent with NUREG-1430.

A6 CTS 3.3.7(C) and (D) define Conditions where the requirements of CTS 3.3.4 (A) cannot be met because one or two trains of reactor building (RB) cooling are not OPERABLE while both trains of RB spray are OPERABLE. The NUREG 3.6.6 Conditions describe what is not OPERABLE but do not include what is OPERABLE since the LCO defines this. The requirements of ITS 3.6.5 Condition B are administratively equal to CTS 3.3.7(C). The requirements of ITS 3.6.5 Condition C are administratively equal to CTS 3.3.7(D). The CTS 3.3.7(C) and (D) statement that "but both reactor building spray systems are operable" is administratively deleted from the CTS to make the CTS Condition statement consistent with NUREG-1430.

A7 CTS 3.3.6 provides actions if the requirements of CTS 3.3.1 for one reactor building (RB) cooling train and one RB spray train are not met during MODES 3 and 4. CTS 3.3.7 (C), (D), and (E) are applicable for CTS 3.3.4 which is applicable during MODES 1 and 2. The references to CTS 3.3.7 and to reactor shutdown are administratively deleted from CTS 3.3.6 in accordance with the Applicability of ITS 3.6.5 Condition E.

3.6.2-1 A8 The NUREG 3.6.2 ACTIONS Note 3 is adopted by the ITS as an appropriate statement of modification to Conditions which is interpreted to be presently available in the CTS. Since this Note is implied to be already available it is adopted as an administrative change.

A9 The NUREG 3.6.2 Condition A Note 1 is adopted administratively since the requirements of NUREG 3.6.2 Condition C are adopted for when two airlock doors are inoperable. This change is administrative because the present practice in implementing CTS 1.7a and b and CTS 3.6.1 for the personnel hatch and emergency hatch is equivalent.

3.6.5-1 A10 Not Used.

A11 Not used.

A12 CTS 4.5.2.1.2 (a)(1) Note 1 is administratively deleted since the "effective until" date of July 14, 1995, has been passed.

A13 CTS 4.12.1 b.2. indicates the visual examination of the hydrogen recombiners is looking for evidence of abnormal conditions "within" the recombiner enclosure. NUREG SR 3.6.8.2 (adopted as ITS SR 3.6.7.2) is worded slightly different in that it does not include the word "within" but still describes a visual examination which is considered administratively equivalent to the CTS examination. Since the two examinations are considered equivalent the ITS will adopt the NUREG SR 3.6.8.2 wording and remain consistent with NUREG-1430.

A14 CTS 3.3.7(E) describes a condition where one of two trains of reactor building (RB) spray and one of two trains of RB cooling are inoperable while meeting CTS 3.3.4(A), that is, during MODE 1 or 2. Since in the ITS, multiple Conditions of an LCO may be entered, the Condition of CTS 3.3.7(E) is equivalent to entering NUREG 3.6.6 Condition A (ITS 3.6.5 Condition A) concurrently with NUREG 3.6.6 Condition C (ITS 3.6.5 Conditon B). The equivalencies extend to the Required Actions and the Completion Times required in the CTS and the NUREG. The requirements of NUREG 3.6.6 Condition A and NUREG 3.6.6 Condition C are therefore adopted administratively as modified for ITS LCO 3.6.5 to retain consistency with NUREG-1430.

A15 Not used.

ANO-444 A16 Not used.

A17 CTS 4.4.1.4 does not specifically identify that isolation valves undergoing functional test are timed while being stroked. However, the CTS functional test is done in accordance with ASME Section XI which includes timing when testing valves. Therefore, NUREG SR 3.6.3.5, which is renumbered and adopted as ITS SR 3.6.3.4, is considered as administratively equivalent.

A18 CTS 1.7 conditions a., b., and c. provide configuration details concerning the OPERABILITY of the equipment hatch, the personnel and emergency hatches and non-automatic reactor building isolation devices. Since these details describe the OPERABLE configuration, they are administratively equivalent to stating that the equipment is OPERABLE. ITS LCOs 3.6.1, 3.6.2, and 3.6.3 will adopt the NUREG convention that the equipment be OPERABLE.

3.6.3-2 A19 The CTS 1.7 condition c. reference to "non-automatic reactor building isolation valves" is considered to envelope manual valves used as reactor building isolation devices. NUREG-1430 LCO 3.6.3 refers to these valve types individually. The CTS 1.7 condition c. definition is revised so that it is consistent with the NUREG and the administrative equivalence is evident.

A20 Fulfilling the requirements of the Reactor Building Leak Rate Testing Program (RBLRTP) is the equivalent of fulfilling the requirements of CTS 4.4.1 as required by CTS 1.7 condition e. The CTS 1.7 definition is revised to remain consistent with the NUREG for the ITS.

ANO 71 A21 Not used.

A22 ANO-1 interprets the CTS 1.7.c requirement that: "All non-automatic reactor building
3.6.3-11 isolation valves and blind flanges are closed as required" to allow manual isolation valves to be opened under administrative controls due to the presence of " as required." The definition of containment integrity for plants of more recent vintage, like ANO-2, specifically allowed an exception to having manual valves locked closed. More specific wording for this exception was inserted into these definitions in response to Generic Letter 91-08, "Removal of Component Lists from Technical Specifications." This was not considered necessary for ANO-1 since the ANO-1 TS did not contain a list of penetrations that would be relocated, and due to the phrase "closed as required."

The alternative would result in a conflict within the CTS. For example, CTS Table 4.1-3 Item 3 requires the core flood tanks to be sampled for boron concentration monthly and after each makeup. The sample penetration is equipped with a remote manual valve inside the reactor building and a manual isolation valve outside of the reactor building. Both valves are normally closed, as required by CTS 1.7.c. However, in order to sample a core flood tank, the manual valve and the remote manual valve must be opened. This is performed under administrative controls and is described in SAR Section 5.2.2.4.1. Without the allowance to open manual valves, as provided by our interpretation of CTS 1.7.c, ANO-1 would not be able to sample the core flood tanks as required by the CTS. The ITS provides clarifications to prevent this apparent conflict. Therefore, this change is considered to be administrative in nature.

A23 CTS 4.5.2.1 and 4.5.2.2 specify the surveillances to be performed on components
3.6.5-4 associated with the reactor building spray and reactor building cooling systems. One interpretation of the requirements would require that all components be tested regardless of whether the component is required to be OPERABLE in accordance with CTS 3.3.1 and CTS 3.3.4. However, CTS 4.0.1 states: "Surveillance Requirements shall be met during the operational modes or other conditions specified for individual LCOs unless otherwise stated in an individual Surveillance Requirement." The CTS 4.0.1 Bases go on to state: "Surveillance Requirements do not have to be performed when the facility is in an operational mode for which the requirements of the associated LCO do not apply unless otherwise specified." Therefore the incorporation of the CTS requirements as ITS SRs 3.6.5.1 through SR 3.6.5.7 is considered to be administrative, from this aspect.

TECHNICAL CHANGE -- MORE RESTRICTIVE

M1 CTS 3.3.1 establishes the Applicability for a number of components, including the Reactor Building (RB) Spray System, the RB Cooling System, and the Engineered Safeguards System valves for these systems by referencing CTS 3.6.1. CTS 3.23.1 establishes Applicability for the RB purge valves similarly by referencing CTS 3.6.1. CTS 4.26.1 establishes Surveillance Frequencies for RB purge isolation valves relative to the requirement for RB Integrity (OPERABILITY) per CTS 3.6.1.

CTS 3.6.1 requires RB Integrity whenever all three following conditions exist:

a. Reactor coolant pressure is $\geq$ 300 psig,
b. Reactor coolant temperature is $\geq$ 200°F, and
c. Nuclear fuel is in the core.

With these criteria, RB Integrity would be required sometime during ITS MODE 4 but not necessarily when this MODE was entered from MODE 5.
The Applicabilities of NUREG 3.6.1 for RB OPERABILITY, NUREG 3.6.3 for the RB isolation valves and NUREG 3.6.6 for the RB Spray and Cooling Systems include MODES 1, 2, 3, and 4. This is an additional restriction on unit operation consistent with NUREG-1430.

M2 The CTS 3.6.1 progression of actions for failure to maintain reactor building (RB) integrity are to restore in 1 hour, be in hot standby (ITS MODE 2) in another 6 hours and in cold shutdown (ITS MODE 5) in a further 30 hours. These actions equate to those presented in NUREG 3.6.1 Condition B, 3.6.2 Condition D, and 3.6.3 Condition D with the following exceptions. NUREG 3.6.1 Required Action (RA) B.1, 3.6.2 RA D.1, and 3.6.3 RA D.1 require the unit to be in MODE 3 in 6 hours after entry into NUREG 3.6.1 Condition B. The NUREG requirement to be in MODE 3 (subcritical) rather than MODE 2 (critical) will be adopted in the ITS and is desirable in this instance because there is less potential energy in a non-critical reactor which could challenge RB OPERABILITY should an event occur. This is an additional restriction on unit operation consistent with NUREG-1430.

3.6.2-3

3.6.3-5

The CTS 3.6.4 progression of actions for failure to maintain RB pressure are identical to those for CTS 3.6.1 above. NUREG 3.6.4 RA B.1 requires the unit to be in MODE 3 in 6 hours after entry into NUREG 3.6.4 Condition B. The NUREG requirement to be in MODE 3 (subcritical) rather than MODE 2 (critical) will be adopted in the ITS for the reasons stated above. This is an additional restriction on unit operation consistent with NUREG-1430.

M3 CTS 3.6.4 and 3.6.6 set requirements while the reactor is critical. This unit status corresponds to ITS MODE 1 and 2. However, the CTS has an implied applicability of MODES 1, 2, 3 and 4 since these specs include a requirement to go to cold shutdown (ITS MODE 5) as part of the actions should the requirements not be met. During MODES 3 and 4, the reactor coolant is reduced to a temperature and pressure significantly below operating conditions at power. However, during these MODES, there remains sufficient stored energy within the coolant to allow any coolant released by a LOCA to flash to steam and thereby cause a release of fission products to the reactor building atmosphere. Although no core damage is anticipated due to a LOCA initiated during shutdown, the fission products present in the coolant at the time of the rupture would be available for release to the reactor building atmosphere. Therefore, maintaining reactor building OPERABILITY during MODES 3 and 4 ensures that the offsite radiation exposure of 10 CFR 100 is not exceeded. The Applicability of NUREG 3.6.4 and NUREG 3.6.6 is MODES 1, 2, 3, and 4. This Applicability will be adopted by the ITS to address the explicit and implicit requirements of the CTS. This is an additional restriction on unit operation consistent with NUREG-1430.

M4 CTS 3.6.5 requires a check of all (inside and outside) manual reactor building (RB) isolation valves "Prior to criticality following a refueling shutdown." The ITS will adopt NUREG SR 3.6.3.3 (renumbered to ITS SR 3.6.3.2) for position checks of valves outside the RB and NUREG SR 3.6.3.4 (renumbered to ITS SR 3.6.3.3) for position checks of valves inside the RB. NUREG SR 3.6.3.3 and NUREG SR 3.6.3.4 explicitly include blind flanges in these position checks. Although CTS 1.7.c includes
3.6.3-6 blind flanges, CTS 3.6.5 does not explicitly require position checks for these components. The adoption of these requirements in the ITS results in a more restrictive requirement in that blind flanges were not explicitly included in the CTS surveillance. The NUREG SR 3.6.3.3 requirements are to verify the position of appropriate valves outside the reactor building on a Frequency of 31 days. The NUREG SR 3.6.3.4 requirements place the inside valve position check Frequency as once when entering MODE 4 from MODE 5 unless done in the previous 92 days instead of when entering MODE 2 from MODE 3 as the CTS requires. The NUREG requirements are more consistent with the ITS threshold for RB OPERABILITY. These are additional restrictions on unit operation consistent with NUREG-1430.

M5 The NUREG 3.6.3 ACTIONS Notes 2 and 3 will be adopted in the ITS as appropriate clarifications of the ACTIONS for each reactor building (RB) isolation valve and its associated system. These details are not specifically addressed in the CTS.

The CTS has implied requirements, associated with requirements for RB integrity, which address two (2) inoperable valves in a penetration flow path, differentiate closed-system penetrations, or verify continued system isolation. The ITS will adopt NUREG 3.6.3 RA A.2 with Notes and both Completion Times, NUREG 3.6.3 Condition B with Note and NUREG 3.6.3 ACTION C with both Notes as appropriately specific, and therefore more restrictive, means of addressing requirements for RB isolation valves. These requirements are additional restrictions on unit operation consistent with NUREG-1430.

M6 Not used.

M7 CTS 3.3.4(B) provides the limits for volume and concentration for the sodium hydroxide (NaOH) tank. CTS Table 4.1-3 item #6 provides the surveillance Frequency for the NaOH solution concentration, however, there is no comparable NaOH tank solution volume surveillance Frequency requirement in the CTS. The ITS will adopt the NUREG SR 3.6.7.2 surveillance Frequency of 184 days for the NaOH tank solution volume to remain consistent with the surveillance Frequency of the NaOH tank solution concentration as well as the requirements of NUREG-1430.

M8 For CTS 3.3.6 and 3.3.7, in the event of concurrent reactor building (RB) spray or RB cooling train inoperability, the existing requirements allow independent application of allowed repair times without restriction. When a subsequent inoperability occurs just prior to restoration of the previous inoperability and close to the expiration of the CTS-allowed 36 hours for RB spray or 7 days for RB cooling, when taken to extreme, this independent application can provide an unlimited time of operation with an inoperable RB Spray or RB cooling train. While these simultaneous inoperabilities are expected to be rare, adoption of the maximum restoration time limit provided by NUREG 3.6.6 A.1 and C.1 is proposed to prevent extended operation in the respective Conditions. The proposed Technical Specifications format presents this as an additional Completion Time of "10 days from discovery of failure to meet the LCO" for both ITS 3.6.5 Required Action (RA) A.1 and RA B.1 and is considered to be reasonable. These additional Completion Time requirements represent additional restrictions on unit operation consistent with NUREG-1430.

M9 Not used.

M10 NUREG SR 3.6.7.1 requires surveillance of the position of the manual, power operated and automatic valves in the Spray Additive System on a frequency of 31 days. NUREG SR 3.6.7.4 requires surveillance of the actuation of the sodium hydroxide flow path automatic valves every 18 months. Neither of these surveillances, including the requirement to verify manual valve position, is in the CTS, however, they are proposed to be adopted in the ITS as adequate methods, compatible with the system design, for assuring the availability of the Spray Additive System for its safety function.

3.6.5-2 NUREG SR 3.6.6.1 requires surveillance of the position of the manual, power operated and automatic valves in the reactor building spray system on a frequency of 31 days. This surveillance, including the requirement to verify manual valve position, is not contained in the CTS, however, it is proposed to be adopted in the ITS as adequate methods, compatible with the system design, for assuring the availability of the reactor building spray system for its safety function.

These NUREG requirements, adopted by the ITS, are additional restrictions on the operation of the unit consistent with NUREG-1430.

M11 In CTS 1.7 a & b, the air lock doors are required to be "closed and sealed" to establish reactor building integrity. In the CTS context, "sealed" means meeting leakage program requirements. The NUREG 3.6.2 Required Action (RA) A.2 requirements, however, include locking the door and the NUREG 3.6.2 RA A.3 requirements include verifying the door is locked. The NUREG requirements to lock the doors when performing these Required Actions will be adopted by the ITS.

The Note on NUREG 3.6.2 RA A.3 which provides that administrative means may be used to verify that air lock doors in high radiation areas are locked closed is adopted by the ITS.

The NUREG SR 3.6.2.1 Notes 1 and 2 are adopted as appropriate modifiers of the Surveillance Requirement. Furthermore, the results of air lock leakage testing, when performed, should be compared with the overall reactor building leakage from other sources to evaluate compliance with the Reactor Building Leakage Rate Testing Program (RBLRTP).

These NUREG requirements, adopted by the ITS, are additional restrictions on the operation of the unit consistent with NUREG-1430.

M12 The CTS requirements for the reactor building (RB) air locks (alternate ANO-1 terminology is the "personnel hatch" and the "emergency hatch") are provided by the RB integrity definition: CTS 1.7 a & b and by CTS 3.6.1 requirements for OPERABILITY.

The air lock door interlock requirements of NUREG 3.6.2 Condition B, including the Condition Notes 1 and 2, and the NUREG 3.6.2 Required Action (RA) B.3 Note are adopted by the ITS to provide specific guidance for this air lock feature. The CTS doesn't provide specific guidance for verification of air lock interlock function. NUREG Surveillance Requirement (SR) 3.6.2.2 will be adopted as appropriate and consistent with the significance of maintaining RB OPERABILITY.

The "reasons other than Condition A or B" air lock inoperable requirements of NUREG 3.6.2 Condition C are adopted by the ITS to provide specific guidance if the reason for an inoperable air lock is related to other than a door or interlock.

These NUREG requirements, adopted by the ITS, are additional restrictions on the operation of the unit consistent with NUREG-1430.

M13 CTS 3.6.4 addresses the reactor building (RB) internal pressure requirements but doesn't provide for surveillance of this parameter. It is proposed that NUREG Surveillance Requirement (SR) 3.6.4.1 be adopted in the ITS to require verification of RB internal pressure on a Frequency of 24 hours. Adoption of this Surveillance Requirement will replace present administrative verification of this parameter and provide appropriate ITS verification of safety analysis assumptions. This requirement is an additional restriction on the operation of the unit consistent with NUREG-1430.

M14 CTS 3.6.4 describes the reactor building (RB) internal pressure as not to exceed 3.0 psig or 5.5 inches Hg vacuum. Verifying RB pressure in inches of mercury, vacuum, is inconsistent with the NUREG format for reactor building (RB) pressure. The equivalent of 5.5 in. Hg vacuum is -2.7 psig, however, this value conflicts with the value assumed in the ANO-1 Emergency Core Cooling System (ECCS) analysis. The ANO-1 ECCS analysis is based on BAW-10103, Rev. 3 "ECCS Analysis of B&W's 177-FA Lowered Loop NSS", dated July, 1977 and lists 13.7 psia as an input assumption. The value of 13.7 psia equates to a value of -1.0 psig. To resolve these difficulties, the ITS will adopt the NUREG format for the RB pressure limits and the values consistent with the ECCS analysis. ITS LCO 3.6.4 and ITS SR 3.6.4.1 will provide RB pressure limits of $\geq$ -1.0 psig and $\leq$ +3.0 psig which is a lesser range than the CTS and is therefore more restrictive on unit operation. This more restrictive change makes the two limits of the range compatible with each other, with the control room indication of the RB pressure, with the appropriate analyses and with NUREG-1430.

3.6.4-2

3.6.4-3

3.6.5-6

M15 CTS 4.5.2.1.1 and CTS 4.5.2.2.2 describe requirements for Reactor Building (RB) Spray System and valve testing, however, there is no requirement for periodic verification of RB Spray System valve lineup. The ITS will adopt the requirements of NUREG SR 3.6.6.1 (as ITS SR 3.6.5.1) as an adequate method of verifying that the RB Spray System will be available if required. The Frequency of 31 days is consistent with the test frequency, in the CTS, of other portions of the RB Cooling System and Spray System. This surveillance is an additional restriction on the operation of the unit consistent with NUREG-1430.

M16 CTS 3.6.5 provides that the provisions of CTS 3.0.3 are not applicable. NUREG LCO 3.6.3 doesn't include such a note, so the requirements of NUREG LCO 3.0.3 are applicable. The requirements of NUREG LCO 3.6.3 will be adopted by the ITS since this LCO provides ACTIONS which will bring the unit to MODE 5 and place the unit in a condition which is more consistent with the ITS threshold for setting RB OPERABILITY. The requirement that LCO 3.0.3 is applicable for ITS 3.6.3 is an additional restriction on the operation of the unit consistent with NUREG-1430.

M17 Not used.

M18 CTS 3.3.6 provides that if the requirements of CTS 3.3.4 for two trains of reactor building (RB) cooling and two trains of RB spray and an OPERABLE Spray Additive System in MODES 1 and 2 can not be met then the unit shall be in MODE 3 within 36 hours. The ITS 3.6.5 Condition D and ITS 3.6.6 Condition B will adopt a Completion Time of 6 hours to be in MODE 3. This is an additional restriction on the operation of the unit consistent with NUREG-1430.

M19 CTS 3.3.6 provides actions if the requirements of CTS 3.3.1 for one OPERABLE reactor building (RB) cooling train and one OPERABLE RB spray train are not met during MODES 3 and 4. However, CTS 3.3.6 does not provide an explicit time for restoration when the requirements of CTS 3.3.1 cannot be met. A restoration Completion Time of 36 hours is adopted for ITS 3.6.5 Condition E, consistent with the format of similar requirements of NUREG-1430. The specifying of a time to restore operability where none was specified before makes this change more restrictive.

3.6.5-1

CTS 3.3.6 requires that the unit be in MODE 5 in 72 hours if the conditions of CTS 3.3.1 can not be met. ITS 3.6.5 Condition F is comparable and will adopt a Completion Time of 36 hours to be in MODE 5. The response time reduction from 72 hours to 36 hours is an additional restriction on the operation of the unit which is consistent with the requirements NUREG-1430.

M20 CTS 3.3.1, CTS 3.3.4, CTS 3.3.5, CTS 3.3.6 and CTS 3.3.7 together form a matrix of requirements for the reactor building (RB) spray and RB cooling trains during MODES 1, 2, 3, and 4. This CTS matrix specifically describes some combinations of OPERABLE and inoperable trains of the two (2) trains of RB cooling and two (2) trains of RB spray during MODES 1 and 2 and the respective required trains during MODES 3 and 4. The CTS matrix, however, doesn't specifically address the combinations described in NUREG 3.6.6 Condition F or its modified version ITS 3.6.5 Condition G. Therefore, CTS 3.3.6 is considered to provide guidance for actions when conditions are not specifically described unless CTS 3.0.3 is considered appropriate. When implementing CTS 3.3.6, if the combination of inoperable trains described in ITS 3.6.5 Condition G were discovered, then CTS 3.0.3 would be considered appropriate and would be entered immediately which is the same Required Action provided by ITS 3.6.5 Condition G. However, the CTS 3.0.3 requirement to be in MODE 3 is 13 hours whereas the ITS LCO 3.0.3 requirement is 6 hours. This reduced response time is an additional restriction on the operation of the unit consistent with NUREG-1430.

M21 Not used.

M22 CTS 3.6.6 provides 24 hours to be in cold shutdown (ITS MODE 5) upon failure to restore an inoperable reactor building (RB) isolation valve or close the other valve after 48 hours while the reactor is critical (i.e., MODE 1 or 2). However, CTS 3.6.6 does not require a time period to be in an intermediate MODE on the descent to MODE 5 although the relationship of CTS 3.6.6 to CTS 3.6.1 by the reactor building integrity requirement implies MODE 3 in 6 hours. NUREG 3.6.3 Required Action (RA) E.1 requires that the unit be in MODE 3 in 6 hours on the way to MODE 5 from a similar Condition. Along with other NUREG requirements, the NUREG 3.6.3 RA E.1 requirements will be adopted as ITS 3.6.3 RA D.1, which is a more restrictive condition on unit operation consistent with NUREG-1430.

M23 CTS 4.4.1.4 requires each remotely operated reactor building isolation valve to be stroke tested to the position required to fulfill their safety function every three months, unless such operation is not practical during plant operation. The latter valves shall be tested once every 18 months. The ANO-1 IST program, in accordance with 1988 OM Code Part 10, requires these valves to be tested nominally every three months. The ANO-1 IST program also utilizes guidance pertaining to cold shutdown testing contained in NUREG 1482. If full stroke testing is not practicable during plant operation, the program requires partial stroke testing during operation and full stroke testing quarterly during cold shutdowns of sufficient duration. If exercising is not practicable during plant operations, the program requires full stroke testing quarterly during cold shutdowns of sufficient duration, and so on. Deleting the CTS 4.4.1.4 requirement results in a more restrictive requirement in that the IST program requires valves that cannot be stroked during power operation to be stroked quarterly during cold shutdowns of sufficient duration. If cold shutdown conditions of sufficient duration were to be entered each quarter (i.e., 92 days since the last test was performed), full stroke testing would be required during each of those cold shutdowns. Although the CTS allows an 18 month frequency for these valves, our current practices are in compliance with the IST program.

ANO-74

TECHNICAL CHANGE—LESS RESTRICTIVE

L1 Not used.

L2 Not used.

L3 The general CTS 3.3.5 maintenance requirements which are applicable to an inoperable reactor building (RB) spray system and the RB cooling system, are revised to be consistent with specific NUREG-1430 requirements for an inoperable RB spray train or RB cooling train. CTS 3.3.5 allows a train of these systems to be made inoperable for up to 24 hours for maintenance, but only if the redundant train is demonstrated operable within 24 hours prior to beginning the maintenance. However, the performance of maintenance on one train does not change the basis for believing that the redundant train is OPERABLE, therefore, this requirement is omitted from the ITS. This change is consistent with NUREG-1430.

L4 Not used.

L5 The requirements of CTS 3.3.7(C) for one inoperable reactor building (RB) cooling train, CTS 3.3.7(D) for two inoperable RB cooling trains, and CTS 3.3.7(E) for one inoperable RB spray and one inoperable RB cooling train correspond, respectively, to the Conditions of ITS 3.6.5 Condition B, Condition C, and a combination of Condition A and B. The Required Actions of these conditions, in the CTS, include time periods to be in hot shutdown (ITS MODE 3) and then cold shutdown (ITS MODE 5). The ITS will divide the Required Action to be in MODE 3 from the requirement to be in MODE 5 as appropriate for the Applicability of the Condition. These ITS Required Action requirements are less restrictive because the CTS required the unit to be placed in MODE 5 even though the Applicability of CTS 3.3.7(C), (D), and (E) is MODES 1 and 2.

L6 The requirements of CTS 3.3.6 (by reference to CTS 3.3.4) for one inoperable reactor building (RB) spray train or an inoperable Spray Additive System correspond, respectively, to the Conditions of ITS 3.6.5 Condition A and ITS 3.6.6 Condition A. The Required Actions of CTS 3.3.6 include time periods to be in hot shutdown (ITS MODE 3) and then cold shutdown (ITS MODE 5). The ITS will divide the Required Action to be in MODE 3 from the requirement to be in MODE 5 as appropriate for the Applicability of the Condition. These ITS Required Action requirements are less restrictive because the CTS required the unit to be placed in MODE 5 even though the Applicability of CTS 3.3.6, in this context, is MODES 1 and 2.

L7 CTS 3.14.1 requires that two hydrogen recombiners be OPERABLE whenever reactor building (RB) integrity is required, that is, during ITS MODES 1, 2, 3 and part of 4. The NUREG 3.6.8 Applicability is MODES 1 and 2. The NUREG Applicability considers that in MODES 3 and 4 both the hydrogen production rate and the total hydrogen produced after a LOCA would be less than that calculated for the DBA LOCA. Also, because of the limited time in these MODES, the probability of an accident requiring the hydrogen recombiners is low. Therefore, a requirement for OPERABLE hydrogen recombiners during MODES 3 and 4 will not be adopted by the ITS. This is a less restrictive condition on unit operation which is adopted in the ITS consistent with NUREG-1430.

L8 CTS 4.12.1a. requires verifying the OPERABILITY of each hydrogen recombiner system by system functional test at least once per 6 months. NUREG SR 3.6.8.1 (ITS SR 3.6.7.1) extends this Frequency to 18 months. Experience has shown that these components usually pass the Surveillance. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint. This Frequency extension is a less restrictive condition on unit operation which is adopted in the ITS consistent with NUREG-1430.

L9 CTS Table 4.1-3 item #6 requires that the sodium hydroxide tank solution concentration be sampled "quarterly and after each makeup." NUREG SR 3.6.7.3 requires a sampling Frequency of 184 days. The 184 day Frequency provided by the NUREG is sufficient to ensure that the NaOH concentration is within the established limits. This conclusion is based on the low likelihood of an uncontrolled change in concentration (the tank is normally isolated from makeup sources) and the probability that any substantial variance in tank volume will be detected. This is a less restrictive condition on unit operation which is adopted in the ITS consistent with NUREG-1430.

L10 CTS 4.5.2.1.1(b) requires that the availability of the reactor building (RB) spray headers and nozzles be verified at least every five (5) years. NUREG SR 3.6.6.8 requires that each spray nozzle be verified unobstructed on a Frequency of every ten (10) years. Due to the passive nature of the design of the nozzles, a ten (10) year Frequency is considered adequate to detect obstruction of the nozzles and will be adopted by the ITS. This is a less restrictive condition on unit operation which is adopted in the ITS consistent with NUREG-1430.

L11 CTS 4.5.2.1.2(a) requires that the service water flow rate of each reactor building (RB) cooling train be tested on a frequency of at least once per 14 days. NUREG SR 3.6.6.3 requires a Frequency of 31 days. The Frequency of 31 days for testing of the service water flow is consistent with the CTS test frequency of other portions of the RB Cooling System. Furthermore, the service water supply to the RB cooling trains is considered reliable and there is a low probability of a significant degradation of flow occurring on a frequency of 31 days. Extension of this Frequency from 14 days to 31 days is a less restrictive condition on unit operation which is adopted in the ITS consistent with NUREG-1430.

L12 The CTS requirements for RB penetrations do not provide alternate position verification methods for valves in high radiation areas. The ITS will adopt the NUREG SR 3.6.3.3 Note and the SR 3.6.3.4 Note allowing verification by administrative means for valves and blind flanges in high radiation areas. These allowances are adopted consistent with Industry ALARA practice while adequately addressing RB OPERABILITY requirements. Their adoption is a less restrictive condition on unit operation consistent with NUREG-1430.

L13 CTS 3.14 requires two (2) hydrogen recombiners to be OPERABLE whenever reactor building (RB) integrity is required, that is, during MODES 1, 2, 3, and part of 4. This direction implies that MODE changes are not allowed with only one (1) hydrogen recombiner OPERABLE. The ITS will adopt the note on NUREG 3.6.8 Required Action A.1 which makes NUREG LCO 3.0.4 not applicable when one hydrogen recombiner is inoperable. Accepting this Note will allow for MODE changes and unit operation during the Completion Time of 30 days adopted for ITS 3.6.7 Required Action A.1. This allowance is predicated on the availability of the other, 100% capacity, hydrogen recombiner, the small probability of a LOCA occurring and the amount of time available after a LOCA for operator action to prevent hydrogen accumulation from exceeding the flammability limit. This is a less restrictive condition on unit operation which is adopted in the ITS consistent with NUREG-1430.

L14 CTS 3.3.4(C) requires that the manual valves in the sodium hydroxide tank main discharge lines shall be locked open before the reactor is made critical (i.e., ITS MODE 2). The NUREG LCO 3.6.7 requirement is an OPERABLE system, which implies that the manual valves be properly positioned but not necessarily locked. NUREG SR 3.6.7.1 requires that the manual valves (and the other valves) in the system, which are not locked or otherwise secured, be verified in their proper position. Therefore, the ITS will delete the requirement to have the Spray Additive System manual valves locked open. This is a less restrictive condition on unit operation which is adopted in the ITS consistent with NUREG-1430.

L15 CTS 3.3.6, unless modified by CTS 3.3.7, provides that if the requirements of CTS 3.3.4 for two trains of reactor building (RB) cooling and two trains of RB spray and an OPERABLE Spray Additive System in MODES 1 and 2 can not be met then the unit shall be in MODE 3 within 36 hours. This 36 hour time period, without CTS 3.3.7 modification, is applicable and includes restoration time when one RB spray train or the Spray Additive System is inoperable in MODES 1 or 2. The ITS will adopt the NUREG 3.6.6 Condition A and the NUREG 3.6.7 Condition A Completion Time of 72 hours for restoration when these conditions exist (see DOC M8 for the requirement to be in MODE 3). This is a less restrictive condition on unit operation which is adopted in the ITS consistent with NUREG-1430.

L16 CTS 3.6.6 addresses the OPERABILITY of reactor building (RB) penetrations with two valves and includes the testing of the "other" valve when one of the valves is recognized as inoperable in a position other than closed. NUREG 3.6.3 Required Action A.1 requires that the affected flow path be isolated but does not require testing of the operable valve dependant on the position of the inoperable valve. ITS 3.6.3 Required Action A.1 will delete the CTS requirement to test the other valve and to isolate using only the Operable valve, and adopt the NUREG 3.6.3 requirements to isolate the flow path by isolating the penetration. This isolation can be made with a closed and deactivated automatic valve, a closed manual valve, a blind flange, or a check valve with the flow secured. This is a less restrictive condition on unit operation which is adopted in the ITS consistent with NUREG-1430.

L17 CTS 3.6.6 provides 24 hours to be in cold shutdown (ITS MODE 5) upon failure to restore an inoperable reactor building (RB) isolation valve or close the other valve, and does not require entering MODE 3 in any specific time. NUREG 3.6.3 Required Action (RA) E.2 provides a less restrictive 36 hours to be in MODE 5 from a similar Condition. However, NUREG 3.6.3 Required Action E.1 is also included and adds a more restrictive "be in MODE 3 [in] 6 hours." These shutdown actions are consistent with the shutdown sequence and times provided throughout the ITS, and are revised here for consistency. The NUREG 3.6.3 RA E.1 and E.2 requirements will be renumbered and adopted as ITS 3.6.3 Required Actions D.1 and D.2. These Completion Times are consistent with NUREG-1430.

L18 CTS 4.4.1.4 describes Isolation Valve Function Tests as being performed on "remotely operated" reactor building (RB) isolation valves. The "remotely operated" set of isolation valves are considered administratively equivalent to the set described as "each power operated and each automatic" isolation valve. However, NUREG Surveillance Requirement (SR) 3.6.3.5, which has been renumbered for adoption as ITS SR 3.6.3.3, has been modified by TSTF-46 to remove the valves identified as power operated. This is because there are valves credited as RB isolation valves which are power operated that do not receive an RB isolation signal. These power operated valves do not have an isolation time assumed in the accident analysis since they require operator action. Therefore, deleting a reference to power operated isolation valve time testing reduces the potential for misinterpreting the requirements of this SR while maintaining the assumptions of the accident analysis. This is a less restrictive condition on unit operation which is adopted in the ITS consistent with NUREG-1430.

L19 CTS 3.3.1(I) and CTS 3.3.4(D) require that the engineered safety features valves for the reactor building (RB) spray system, RB cooling system and spray additive system be OPERABLE or locked in the Engineered Safeguards (ES) position whenever the associated system or component was required to be OPERABLE. These requirements apply to automatic valves only since manual valves would be considered OPERABLE when they are in the appropriate position. Locking of a valve under these requirements is only appropriate if a valve is not OPERABLE. ITS LCOs 3.6.5 and 3.6.6 will retain these requirements as a condition of system OPERABILITY. However, NUREG-1430 and the ITS allow the ES valves to be verified OPERABLE by actuation to the correct position or by being locked, sealed or otherwise secured in position. The expanded options for administratively controlling valve position will be adopted by the ITS. This is a less restrictive condition on unit operation which is adopted in the ITS consistent with NUREG-1430.

3.6.5-2

3.6.6-2

L20 CTS 3.6.5 requires that the reactor building (RB) manual isolation valves that are required to be closed, be confirmed closed and locked. ITS SR 3.6.3.2 and SR 3.6.3.3 require that the outside and inside reactor building manual isolation valves be verified closed unless locked, sealed or otherwise secured in position. This relaxes the requirement that all valves that are required to be closed be locked closed. Furthermore, the position verification requirements for valves that are closed and locked are allowed to be administratively controlled outside of Technical Specification requirements. The expanded options for controlling and verifying valve position will be adopted by the ITS. This is a less restrictive condition on unit operation which is adopted in the ITS consistent with NUREG-1430.

L21 NUREG 3.6.2 provides several allowances that the CTS do not explicitly provide. NUREG 3.6.2 Action Note 1 allows entry and exit to perform repairs on affected air lock components. NUREG 3.6.2 Actions Note 2 allows a separate Condition entry for each air lock. NUREG 3.6.2 Condition A Required Action Note 2 allows entry and exit for 7 days under administrative controls if both air locks are inoperable. These allowances have been incorporated in ITS 3.6.2. These less restrictive requirements allowing entry and exit are acceptable due to the relatively short periods of time the operable door is open during entry and exit and the low probability of an accident requiring reactor building isolation during these short periods of time. Separate Condition entry recognizes the fact that both airlocks may become inoperable at different times, thus requiring accelerated actions in responding to the second inoperability. The ITS contains the actions required to ensure reactor building integrity can be maintained, consistent with NUREG-1430.

3.6.2-1

3.6.2-4

3.6.3-8 L22 NUREG 3.6.3 Condition C provides the Required Actions and associated Completion Times for inoperable penetration flow paths with one reactor building isolation valve inoperable for General Design Criteria (GDC) 57 penetrations associated with closed systems. A GDC 57 penetration relies upon the existence of a closed system as a passive isolation barrier in lieu of a second isolation valve. Currently, in the event of reactor building isolation valve inoperability associated with a closed system, CTS 3.6.6 would not apply since the actions require closing the operable valve and the actions of CTS 3.6.1 would be conservatively entered.

The proposed ITS incorporate the NUREG 3.6.3 Condition C requirements, as modified by generic change TSTF-30, Rev 3. This results in extending the Completion time from the CTS 3.6.1 allowed 1 hour to 72 hours. This less restrictive change is acceptable due to the proposed compensatory actions to ensure an appropriate level of reactor building integrity is maintained and is consistent with NUREG-1430, as modified by TSTF-30, Rev 3.

3.6.5-8 L23 CTS 4.5.2.1.1.a and CTS 4.5.2.1.2.c.1 require that a "test signal" be applied to demonstrate actuation of the reactor building spray system and the reactor building emergency cooling system, respectively. NUREG SRs 3.6.6.5, 3.6.6.6, and 3.6.6.7 allow these tests to be performed by use of "an actual or simulated actuation signal." One interpretation of the CTS requirements would allow the use of a simulated actuation signal, but would not allow crediting an actual actuation signal. The allowance to credit an actual actuation signal has been incorporated in ITS SRs 3.6.5.5, 3.6.5.6, and 3.6.5.7. This change is consistent with NUREG-1430 and is acceptable because an actual actuation signal would result in actuating the entire system, such as is done with a simulated test signal.

L24 CTS 4.26.2 requires that a leakrate of the reactor building purge supply and exhaust isolation valves be verified within acceptable limits prior to exceeding conditions which require establishment of reactor building integrity (RCS temperature ≥200°F, RCS pressure ≥300 psig, and nuclear fuel in the core), unless the test has been successfully completed within the last three months. According to the CTS 4.26 Bases, this surveillance requirement frequency was based on Generic Issue B-20 "Containment Leakage Due to Seal Deterioration", which was concerned with isolation valves that have resilient seals. In 1998, ANO-1 made a design change, which replaced all the Reactor Building Purge valves. The new valves, manufactured by Atwood & Morrill Co., Inc., have multilayer metallic wafer seats. Therefore, the issue related to resilient seated valves described in Generic Issue B-20 is no longer a concern.

3.6.1-4
3.6.3-3
3.6.3-4
3.6.3-13

ANO-1 has determined that NUREG SR 3.6.3.6 should not be adopted since it is specific to resilient seated purge valves, the surveillance testing criteria, including the CTS specified test frequency, have been retained in ITS section 5.5.16, "Reactor Building Leakage Testing Program" and still remain under the control of 10 CFR 50.36. The incorporation of the testing requirements for the reactor building purge valves in ITS 5.5.16 retains the CTS 4.26.2 required frequency of performance.

ANO-360 L25 STS 3.6.3 ACTIONS Note 1 allows closed penetration valves to be intermittently opened under administrative controls. This exception includes automatic reactor building isolation valves that may be deactivated closed in compliance with the ACTIONS of STS 3.6.3. CTS 1.7.c and 3.6.6 did not specifically provide this exception and, therefore, the adoption of the note results in a less restrictive change. This exception is necessary because certain operational requirements may necessitate the opening of deactivated automatic valves to support activities such as sampling or inventory adjustments of systems inside the reactor building. Implicit in this allowance is that an operator, in direct communication with the control room staff, is stationed at or, if in a high radiation area, near the valve controls, ready to immediately re-close the valve should reactor building isolation be required. The environmental condition of the area surrounding the valve controls is also considered for cases where an accident may drastically change such conditions. Although not specifically defined, the term "intermittently" as applied in the note is interpreted by ANO to indicate a short period of time and does not provide for misuse of the intent by opening affected valves for a period any longer than absolutely necessary to perform a required function. Based on the strict administrative controls placed on these intermittent openings of deactivated reactor building isolation valves, the adoption of ACTIONS Note 1 is acceptable. This change is consistent with NUREG-1430, Rev. 1.

ANO-444 L26 CTS Table 4.1-2 Item #8 requires that the Reactor Building Isolation Trip be tested for "Functioning" every 18 months. NUREG SR 3.6.3.7 requires that each automatic reactor building isolation valve that is not locked, sealed, or otherwise secured in position, actuates to the isolation position on an actual or simulated actuation signal. NUREG 3.6.3.7 exempts those automatic valves that are locked, sealed, or otherwise secured in position from the required test. This exception is not explicitly presented in the CTS and, therefore, is a less restrictive condition on unit operation. The adoption of this exemption is acceptable because those valves that are locked, sealed, or otherwise secured in position are not being relied upon to change states at the onset of an accident. Because these valves are not being relied upon, testing intended to ensure the valve can reach the desired safety-related position is not required. This change is consistent with NUREG-1430, Rev. 1.

LESS RESTRICTIVE—ADMINISTRATIVE DELETION OF REQUIREMENTS

LA1 This information has been moved to the Bases. This information provides details of design or process that are not directly pertinent to the actual requirement, i.e., Definition, Limiting Condition for Operation or Surveillance Requirement, but rather describe additional unnecessary details such as an acceptable method of compliance. Since these details are not necessary to adequately describe the actual regulatory requirement, they can be moved to a licensee controlled document without a significant impact on safety. Placing these details in controlled documents provides adequate assurance that they will be maintained. The Bases will be controlled by the Bases Control Program in Chapter 5 of the proposed Technical Specifications. This change is consistent with NUREG-1430.

	CTS Location	New Location
3.6.1-1	1.7 a, b, c, & d	B3.6.1 BKG
	1.7 a. & e.	B3.6.1 LCO
	1.7 a. & b.	B3.6.2 LCO
	1.7 c.	B3.6.3 LCO
	3.3.4 (A)	B3.6.5 BKG
	3.3.4 (D)	B3.6.5 BKG & B3.6.6 BKG
	3.14.1	B3.6.7 BKG
	3.23.1	B3.6.3 BKG
ANO-445	4.5.2.1.1 (a)	B3.6.5 SR 3.6.5.5 & 3.6.5.6
	4.5.2.1.1 (b)	B3.6.5 SR 3.6.5.8
	4.5.2.1.1 (c)	B3.6.5 SR 3.6.5.5 & 3.6.5.6
	4.5.2.1.2(a)(2)	B3.6.5 BKG & SR 3.6.5.3
3.6.5-9	4.5.2.1.2(b)(1)	B3.6.5 SR 3.6.5.2
	4.5.2.1.2(c)(3)	B3.6.5 SR 3.6.5.7
3.6.5-3	4.5.2.2.1	B3.6.5 SR 3.6.5.4
	4.12.1 a.	B3.6.7 SR 3.6.7.1
	4.12.1 b.2.	B3.6.7 SR 3.6.7.2
	4.12.1 b.3.	B3.6.7 SR 3.6.7.3
	4.26.1	B3.6.3 SR 3.6.3.1

LA2 This information has been moved to the Technical Requirements Manual (TRM). This information provides details of design or process which are not directly pertinent to the actual requirement, i.e., Definition, Limiting Condition for Operation or Surveillance Requirement, but rather describe additional unnecessary details such as an acceptable method of compliance. Since these details are not necessary to adequately describe the actual regulatory requirement, they can be moved to a licensee controlled document without a significant impact on safety. Placing these details in controlled documents provides adequate assurance that they will be maintained. The TRM will be controlled by 10 CFR 50.59 and 10 CFR 50.71, as applicable. This change is consistent with NUREG-1430.

CTS Location	New Location
4.12.1.b.1	TRM

LA3 This information has been moved to a licensee controlled document such as the Reactor Building Leakage Rate Testing Program (RBLRTP), In-Service Testing (IST),and plant procedures, etc. This information provides details of the method of implementation that are not directly pertinent to the actual requirement. Since these details are not necessary to adequately describe the actual regulatory requirement, they can be moved to a licensee controlled document without a significant impact on safety. Placing these details in controlled documents provides adequate assurance that they will be maintained. The details relocated to the RBLRTP, RBTSP, and IST will be controlled by 10 CFR 50.59. The CTS location and ITS location for each of these items is listed below. This change is consistent with NUREG-1430.

	CTS Location	New Location	Existing IST Frequency
3.6.5-3	4.5.2.2.1 & 4.5.2.2.2	IST	3 months

ANO-334 A7 Not used.

3.7-14 A8 The "at greater than 1600 ppm" requirement for boron concentration of the spent fuel pool in CTS 3.8.17 has been revised to "≥ 1600 ppm" in ITS 3.7.14. These are considered to be essentially equivalent since the parameter can be less than the limit, but be so close as to be imperceptible. This change is consistent with design basis and with NUREG-1430.

A9 Not used.

A10 This information has been removed from the ITS since it duplicates requirements provided in the regulations. Such duplication is unnecessary and results in additional administrative burden to revise the duplicate TS when these regulations are revised. Since removal of the duplication results in no actual change in the requirements, removal of the duplicative information is considered an administrative change. Further, changes to the requirements are controlled by the NRC. This change is consistent with NUREG-1430.

CTS Location	Duplicated Regulation
3.12.3	10 CFR 30, 40 & 70

A11 Not used.

ANO-362 A12 Not used.

A13 Not used.

ANO-420 A14 Not used.

3.7-07 A15 CTS 3.3.1.E requires both low pressure injection (LPI) coolers and their cooling water supplies to be operable whenever containment integrity is established. The portion of CTS 3.3.1.E specifying the LPI coolers is contained in ITS 3.5.2 and ITS 3.5.3. However, the portion of CTS 3.3.1.E specifying the cooling water supplies is incorporated in ITS 3.7.7. ITS 3.7.7 requires two loops of service water to be OPERABLE. This is acceptable because the cooling water supply to the LPI coolers is the service water system, and the service water system is required to be OPERABLE in the same MODES as the LPI system. This maintains the proper support system relationship for the service water system and the LPI coolers.

ANO-395

ANO-293

Additionally, if the CST is not restored to operable status or the backup water supply is not verified to be operable, the Completion Time for placing the unit in a subcritical condition is reduced to 6 hours from 12 hours, and the Completion Time for placing the unit in a condition in which the LCO does not apply after becoming subcritical is reduced from 72 hours to 12 hours. These Completion Times provide sufficient time to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems and are consistent with NUREG-1430.

Finally, a Surveillance Requirement is incorporated to periodically verify the volume of the CST is within limits. The surveillance is necessary to periodically verify the primary EFW water source is available as assumed in the safety analysis. These changes are also additional restrictions on unit operation consistent with NUREG-1430.

M8 An additional Completion Time has been added to those in CTS 3.4.4 to not only require the steam supply to be restored within 7 days from discovery of the inoperable pump (proposed Required Action A.1), or the train within 72 hours (proposed Required Action B.1), but also within 10 days from discovery of failure to meet any of the requirements of the LCO. Currently, for example, if the motor driven pump and one steam supply to the turbine driven pump are concurrently inoperable, separate Actions are entered and the associated Actions are performed with separate Completion Times. Since there are multiple Conditions for different components that are inoperable, it is possible, (however it is extremely unlikely), that the unit can have at least one component inoperable for an unlimited time, and yet a shutdown would never be required (i.e., individual components are repaired within these required restoration times, but there is always at least one component inoperable). The new Completion Time establishes a limit on the maximum time allowed for any combination of Conditions to be inoperable during any continuous failure to meet this LCO. This is an additional restriction on unit operation consistent with NUREG-1430.

M9 CTS 3.3.1 (C) and (I) requires that the service water system pumps and valves be OPERABLE "whenever containment integrity is established as required by Specification 3.6.1." CTS 3.6.1 requires containment integrity whenever RCS pressure is ≥ 300 psig, RCS temperature is ≥ 200°F, and fuel is in the reactor. The ITS requirement for service water pumps is independent of RCS pressure. The pumps and valves will be required with fuel in the reactor and RCS temperature ≥ 200°F. This is an additional restriction on unit operation consistent with NUREG-1430.

M10 CTS 3.3.1(I) requires the valves associated with the service water system to be OPERABLE or locked in the engineered safeguards position, but there are no surveillance requirements specified to verify this requirement. RSTS SR 3.7.8.1 is proposed to be adopted (as ITS SR 3.7.7.1) to periodically verify the position of valves which are not secured in the correct position. ITS SR 3.7.7.1 is also proposed with a Note that indicates that isolation of flow to individual components does not render the SWS inoperable. Overall, this new surveillance is considered an additional restriction on unit operation consistent with NUREG-1430.

L3 The CTS 3.4.2 requirements for placing the unit in cold shutdown if the other Required Actions are not met is revised to require only that the unit be placed in a condition in which the requirements for the inoperable equipment are not applicable. For the MSSVs, MSIVs, and MFIVs, this will require only that the unit be placed in MODE 4. The CTS required that the unit be placed in cold shutdown (equivalent to ITS MODE 5) even though the equipment was only required above 280°F. This is consistent with NUREG-1430 general application for Required Actions.

L4 The CTS 3.4.2 requirements for shutdown if one MSIV is inoperable are proposed to be revised to allow continued operation in MODE 3 if the isolation valve is closed and periodically verified to remain closed. This is appropriate since the only safety function of the isolation valves is closure. The Completion Time is appropriate since the valve isolates a closed system, which provides an additional barrier for containment isolation. Therefore, the CTS allowed time for continued operation in MODE 3 prior to any action, i.e., 48 hours, is retained as the proposed Completion Time for isolation valve closure. Since each such inoperability will require an additional closure, a Note is included to allow separate entry into the Condition for each inoperable MSIV (or MFIV). This Note is consistent with NUREG-1430.

3.7-02

ANO-427

The CTS 3.4.2 requirements for shutdown if one MFIV is inoperable are proposed to be revised to allow continued operation in MODE 3 if the isolation valve is closed and periodically verified to remain closed. This is appropriate since the only safety function of the isolation valves is closure. The Completion Time to restore an inoperable MFIV to Operable status has been revised from 24 hours to 72 hours. This Completion Time is acceptable due to the presence of a redundant set of valves (Main Feedwater Block Valves, Low Load Feedwater Control Valves and Startup Feedwater Control Valves) in each main feedwater line. Since each such inoperability will require an additional closure, a Note is included to allow separate entry into the Conditions for each inoperable MFIV. These changes are consistent with NUREG-1430.

L5 The CTS Table 4.1-2 (items 13.a and 14.a) quarterly exercising of the MSIVs and MFIVs is omitted. This exercising, while typically required by Section XI for isolation valves, is normally excepted for MSIVs and MFIVs since even partial stroke testing of these valves increases the risk of a valve closure with the unit generating power. Such a valve closure would result in an unnecessary transient. The normal stroke testing of these valves during startup following a refueling outage (see related DOC M5) provides sufficient verification of the OPERABILITY of these valves. This change is consistent with NUREG-1430.

L6 Not used.

LA3 This information has been moved to the Technical Requirements Manual (TRM) or the Safety Analysis Report (SAR). This information provides details of design or process which are not directly pertinent to the actual requirement, i.e., Definition, Limiting Condition for Operation or Surveillance Requirement, but rather describe additional unnecessary details such as an acceptable method of compliance. Since these details are not necessary to adequately describe the actual regulatory requirement, they can be moved to a licensee controlled document without a significant impact on safety. Placing these details in controlled documents provides adequate assurance that they will be maintained. The TRM and the SAR will be controlled by 10 CFR 50.59 and 10 CFR 50.71, as applicable. This change is consistent with NUREG-1430.

3.7-31
3.7-15
3.7-19
ANO-446
3.7-21

CTS Location	New Location
Figure 3.8.1	SAR Fig. 9-53
Table 4.1-3, #4 w/Note (9)	TRM
4.5.1.1.2 (b)	SAR Table 6-5
4.5.2.1.2 (c) (3)	TRM
4.11.5	SAR

3.7-19
3.7-21

LA4 The requirements of CTS 3.12.1, "Miscellaneous Radioactive Materials Sources," and CTS 4.14, "Radioactive Materials Sources Surveillance," have been moved to the Technical Requirements Manual. The requirements specified by CTS 3.12.2 and 3.12.3 are addressed in DOC-L11 and DOC-A10, respectively. The requirements of CTS 3.12 and 4.14 are intended to assure that leakage from byproduct, source, and special nuclear material sources does not exceed allowable limits. Criteria for inclusion of requirements in the Technical Specifications are provided in 10 CFR 50.36. The requirements associated with radioactive materials sources have been evaluated with respect to the four criteria of 10 CFR 50.36, as follows:

Criterion 1

These sources are not considered to be installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary.

Criterion 2

These sources are not a process variable, design feature, or operating restriction that is an initial condition of a design basis accident or transient analysis that either assumes the failure of or challenge to the integrity of a fission product barrier.

Criterion 3

These sources are not a structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a design basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

Criterion 4

Radioactive materials sources are not addressed in the ANO-1 Probabilistic Safety Assessment. Therefore, radioactive materials sources are not considered to be risk significant from a reactor safety point of view.

Therefore, this proposed relocation is acceptable since the requirements associated with the radioactive materials sources do not meet any of the 10 CFR 50.36 criteria for inclusion in the Technical Specifications.

ANO-416 LA5 The requirement to determine the gross radioiodine concentration of the secondary coolant on a weekly basis in accordance with CTS Table 4.1-3, Item 5.a has been moved to the TRM. Associated Notes 5, 7, and 10 are also moved to the TRM, but may also be retained in the TSs if they are applicable to other Table 4.1-3 requirements. The radioiodine determination is a backup to installed on-line secondary radiation monitoring devices such as the main steam line radiation monitors and the N16 radiation monitors. This information provides details of design or process which are not directly pertinent to the actual requirement, i.e., Definition, Limiting Condition for Operation or Surveillance Requirement, but rather describe additional unnecessary details such as an acceptable method of compliance. Since these details are not necessary to adequately describe the actual regulatory requirement, they can be moved to a licensee controlled document without a significant impact on safety. Placing these details in controlled documents provides adequate assurance that they will be maintained. The TRM will be controlled by 10 CFR 50.59. This change is consistent with NUREG-1430.

ANO-419 LA6 Six welds exist in the main steam and main feedwater lines located outside of the reactor building where protection from the consequences of postulated ruptures is not provided by a system of pipe whip restraints, jet impingement barriers, protective enclosures and/or other measures designed specifically to cope with such ruptures. These welds receive an augmented inspection that enhances the integrity of the pipe and reduces the probability of catastrophic failure. The inspection is performed in accordance with ASME Section XI and is a sequential volumetric inspection. Repairs, reexaminations and piping pressure tests, as required, are also performed in accordance with ASME Section XI. The CTS 4.15 requirements for performing these inspections do not meet the criteria of 10 CFR 50.36(c)(2)(ii) for retention in the ITS. Therefore, they are relocated to the Inservice Inspection (ISI) Program.

LESS RESTRICTIVE -- ADMINISTRATIVE DELETION OF REQUIREMENTS

LA1 The description of the equipment to which the requirements are applicable has been moved to the licensee controlled Bases. This information provides details of the method of implementation, which are not directly pertinent to the actual requirement. Since these details are not necessary to adequately describe the actual regulatory requirement, they can be moved to a licensee controlled document without a significant impact on safety. Placing these details in controlled documents provides adequate assurance that they will be maintained. The Bases will be controlled by the process identified in Chapter 5 of the proposed ITS. The CTS location and ITS location for each of these items is listed below. This change is consistent with NUREG-1430.

	CTS Location	New Location
	3.7.1.A	Bases 3.8.1, LCO
3.8.1-03 3.8.1-19	3.7.1.G	Bases 3.8.1, SR 3.8.1.7
	Table 4.1-1, item 32	Bases 3.8.1, SR 3.8.1.8, SR 3.8.1.9
	Table 4.1-1, item 33	Bases 3.8.1, SR 3.8.1.7
3.8.1-16	4.6.1.1	Bases 3.8.1, SR 3.8.1.2

LA2 The ambiguous limitation for inoperability of a diesel generator of "7 days in any month" in CTS 3.7.2.C is removed from the proposed Completion Time for an inoperable diesel generator. Such limitations on total time of inoperability are based on reliability concerns and are not addressed in the RSTS. This limitation will be addressed by the maintenance program in accordance with 10 CFR 50.65. The programmatic controls on diesel generator unavailability are sufficient to ensure the diesel generator receives adequate attention to maintain high reliability. Removal of these details from the Technical Specifications will have no significant effect on diesel generator OPERABILITY. Placing these details in controlled documents provides adequate assurance that they will be maintained. Changes to the program and procedures will be controlled by 10 CFR 50.59. This change is consistent with NUREG-1430.

ANO-393

LA3 The description of the equipment to which the requirements are applicable has been moved to the licensee controlled Technical Requirements Manual (TRM). This information provides details of the method of implementation, which are not directly pertinent to the actual requirement. Since these details are not necessary to adequately describe the actual regulatory requirement, they can be moved to a licensee controlled document without a significant impact on safety. Placing these details in controlled documents provides adequate assurance that they will be maintained. The TRM will be controlled by 10 CFR 50.59. The CTS location and ITS location for each of these items is listed below. This change is consistent with NUREG-1430.

	CTS Location	New Location
3.8.1-03	Table 4.1-1, item 33	TRM
	4.6.1.1	TRM
3.8.1-16	4.6.1.3	TRM

LA4 The CTS 4.6.1.5 Surveillance is not specifically detailed in the proposed ITS. Programmatic controls on the Inservice Testing Program (IST) are sufficient to ensure the diesel generator fuel oil transfer pumps receive the required testing. Removal of these details from the Technical Specifications will have no effect on diesel generator OPERABILITY. The testing will be maintained in the IST and procedures. Placing these details in controlled documents provides adequate assurance that they will be maintained. Changes to the IST and the procedures will be controlled by 10 CFR 50.55a and 10 CFR 50.59. This change is consistent with NUREG-1430.

LA5 CTS 4.6.2.4 requires that any battery "which has not been loaded while connected to its 125 VDC distribution system" to be loaded for 30 minutes each quarter. The associated Bases provide the added confirmation that this loading is simply "supplying the connected loads while maintaining the battery fully charged." This requirement is obviously being met for any connected battery charger by virtue of satisfying CTS 4.6.2.1, "Verify battery terminal voltage is $\geq$ 124.7 V on float charge," which is retained as ITS SR 3.8.4.1. As such, this single Surveillance adequately and completely encompasses CTS 4.6.2.4 (30 minute loading). The remaining purpose of CTS 4.6.2.4 is to imply alternating each battery charger with the spare charger each quarter. This operational maintenance practice is relocated from the Technical Specifications to the TRM. Since these details are not necessary to maintain or confirm OPERABILITY of the in-service charger, it can be moved to a licensee controlled document without a significant impact on safety. The TRM will be controlled by 10 CFR 50.59. This change is consistent with NUREG-1430.

ADMINISTRATIVE

A1 The designated change represents a non-technical, non-intent change to the Arkansas Nuclear One, Unit 1 Current Technical Specifications (CTS) made to make the ANO-1 Improved Technical Specifications (ITS) consistent with the B&W Standard Technical Specification, NUREG-1430, Revision 1. This change does not alter the requirements of the CTS or RSTS. Examples of this type of change include: wording preference; convention adoption; editorial, numbering and formatting changes; and hierarchy structure.

A2 The ANO-1 CTS Bases will be administratively deleted in their entirety in favor of the NUREG-1430 Bases. The CTS Bases will be reviewed for technical content that will be identified for retention in the ITS Bases.

A3 CTS 3.8.9 provides the required actions should one or more of the preceding Specifications not be met. CTS 3.8.9 establishes measures that are considered equivalent to the Required Actions of ITS 3.9.1 Condition A, ITS 3.9.2 Condition A and Required Action B.1, and ITS 3.9.3 Condition A. Although the exact wording is not the same, these are considered equivalent actions and adoption of the ITS requirements constitutes an administrative change. In addition, the Completion Time of "immediately" has been annotated on the CTS markup. This is implicit in a number of CTS actions and explicit in other CTS actions. The addition of this immediate Completion Time establishes Required Actions consistent with those specified in the ITS.

A4 The CTS 3.8.3.a Note * to allow the decay heat removal loop to be secured for periods up to 1 hour per 8 hour period was modified to reflect the exact wording of the ITS LCO 3.9.4 Note. The modification of the CTS 3.8.3.a Note * involved two changes that are both considered administrative in nature.

The first change added words that state that reactor coolant boron concentration reductions are not allowed during the period of time associated with the secured decay heat removal loop. This is consistent with the CTS (per CTS 3.1.1.1.B) which permits boron concentration reductions only when at least one decay heat removal pump is circulating reactor coolant. This requirement is implicitly retained in the ITS through 3.9.4 Required Action A.1 which directs that operations involving a reduction of the reactor coolant boron concentration be immediately suspended should the required reactor coolant circulation not be present, and is explicitly established in the LCO Bases for 3.9.4.

The second change involved the deletion of the words that restricted the applicability of this Note to "during the performance of core alterations." The allowance to secure the decay heat removal loop for a limited period of time in the CTS was dependent upon the availability of a backup source of decay heat removal because the Note modified the decay heat loop OPERABILITY requirements when reactor coolant level was greater than 23 feet above the fuel seated in the reactor pressure vessel. This restriction is inherently present in the ITS through the structure of the Applicability statements for LCOs 3.9.4 and 3.9.5 and the presence of the Note in LCO 3.9.4.

A5 CTS 3.8.9 and 3.8.10 state that the provisions of CTS 3.0.3 are not applicable. This exception is necessary in the CTS because of the concurrent use of CTS 3.8.9 as the Required Actions and associated Completion Times for a number of CTS Specifications (CTS 3.8.1 through CTS 3.8.8), several of which are MODE independent. The ITS 3.9, "REFUELING OPERATIONS" series of specifications will contain appropriate MODES, Applicabilities, Conditions and Surveillance Requirements such that the exception to LCO 3.0.3 will no longer be necessary. Further, the LCO 3.0.3 exception is unnecessary for the ITS 3.9 series of specifications because LCO 3.0.3 does not apply in MODES 5 and 6. This change is classified as administrative because the operating flexibility employed by the CTS 3.0.3 exception is inherent in the structure of the ITS.

A6 The CTS markup was annotated to show adoption of ITS LCO 3.9.4 Applicability. ITS LCO 3.9.4 is comparable to CTS 3.8.3.a. However, the CTS did not explicitly establish an Applicability for this Specification. This is considered an administrative change because the intended Applicability for the CTS was during refueling activities which corresponds to MODE 6 in the ITS. In addition, CTS 3.8.3.b established LCO requirements comparable to those stated by ITS 3.9.5 (i.e., DHR requirements when less than 23 feet of water covered the irradiated fuel). Because CTS 3.8.3.b established LCO requirements when the water level was less than 23 feet above the fuel, it is implied that CTS 3.8.3.a had an Applicability when the water level was greater than 23 feet above the fuel. Based on this reasoning, the adoption of the ITS 3.9.4 Applicability is administrative.

A7 ITS 3.9.5 Required Action A.2 is shown as being adopted on the CTS markup. This Required Action is an alternative to A.1 which requires restoration of the inoperable DHR loop. Required Action A.2 serves to remove the unit from the MODE of Applicability. This is cited as an Administrative change because this action (i.e., removing the unit from the Applicability) was available as an option in the CTS although not explicitly written as a Required Action. This change is consistent with NUREG-1430.

A8 CTS 3.8.3.a was annotated to show the explicit Completion Time of "immediately" for the ITS Required Actions that reference CTS 3.8.3.a. This is shown as an administrative adoption because the assigned Completion Time is consistent with other CTS required actions in this series of Specifications. This change is consistent with NUREG-1430.

A9 ITS 3.9.1 Applicability Note is shown as being adopted on the CTS markup. This
ANO-251 Note was incorporated in NUREG-1430 as a result of TSTF-272, Rev 1, and requires that boron concentration is only applicable to the refueling canal when connected to the RCS. The CTS does not specifically state whether the requirements for boron concentration must be maintained only when the refueling canal is connected to the RCS. However, CTS 3.8.4 does state that the boron concentration must be met during fuel loading and unloading. Since these activities can only be performed with the refueling canal connected to the RCS, the incorporation of this change is consistent with the current license basis.

A10 Not used.

TECHNICAL CHANGE -- MORE RESTRICTIVE

M1 The CTS markup was annotated to show adoption of NUREG-1430 SR 3.9.5.2
3.9-07 (ITS SR 3.9.5.2) which requires verification of correct breaker alignment and indicated power availability to the required DHR pump that is not in operation with a Frequency of 7 days. This SR verifies the availability of the non-operating DHR loop required when the reactor coolant level is less than 23 feet above the top of the fuel seated in the reactor pressure vessel. The adoption of this ITS SR results in additional operational requirements or constraints beyond those imposed by the CTS. This change is consistent with NUREG-1430.

M2 Not used.

M3 The last paragraph of CTS 3.8.3 established the last of the required actions for
3.9-07 CTS 3.8.3.a and 3.8.3.b. This paragraph is connected to the previous paragraphs with an "otherwise" which would imply this to be an alternative to the previous required actions. The CTS action established by this paragraph will be connected to the equivalent ITS Required Actions with an "and." This conjunction will eliminate the apparent alternative that is present in the CTS. Thus, the ITS Required Actions (3.9.4 RA A.3, 3.9.5 RA A.1 and 3.95 RA B.2) that reference this specification will be more restrictive than the CTS. This change is consistent with NUREG-1430.

M4 CTS 3.8.4 established the requirement for minimum boron concentration during "reactor vessel head removal and while loading and unloading fuel from the reactor." The Applicability for ITS LCO 3.9.1 will be MODE 6. MODE 6 is entered with the detensioning of the first reactor vessel head stud and will be in effect as long as fuel is in the vessel until the last reactor vessel head stud is retensioned. Thus, the Applicability of ITS LCO 3.9.1 will be more inclusive and more restrictive than the requirements of the CTS because it includes the period of time associated with vessel head reinstallation. This change is consistent with NUREG-1430.

M5 The CTS markup was annotated to show the adoption of ITS LCO 3.9.2 Required Action B.2. ITS 3.9.2 Condition B establishes the Required Actions should both of the required source range neutron flux monitors become inoperable. Required Action B.1 is established by CTS 3.8.9. ITS 3.9.2 Required Action B.2 requires performance of SR 3.9.1.1 with a Completion Time of once per 12 hours. ITS SR 3.9.1.1 verifies that the boron concentration of the RCS, refueling canal and refueling cavity is within its limits. No comparable CTS required action exists. Therefore, through the adoption of ITS 3.9.2 Required Action B.2, the ITS will impose an additional restriction on the unit. The adoption of ITS 3.9.2 Required Action B.2, in conjunction with the current requirements of ITS 3.9.2 Condition A and Required Action B.1, ensures that the core's reactivity condition is not changing during the period when no OPERABLE source range nuclear instrument is available for the detection of changes in core reactivity. This change is consistent with NUREG-1430.

M6 The CTS markup was annotated to show the adoption of ITS SR 3.9.2.1, SR 3.9.2.2 and the SR 3.9.2.2 Note. SR 3.9.2.1 established requirements for a CHANNEL CHECK every 12 hours. SR 3.9.2.2 established requirements that a CHANNEL CALIBRATION be performed every 18 months. The SR 3.9.2.2 Note excludes the neutron detectors from the CHANNEL CALIBRATION requirements because of the inability to calibrate these detectors. The ANO-1 CTS did not include similar surveillance requirements in this MODE of Applicability. Therefore, the ITS will impose additional restrictions on the unit. These SRs are necessary because they serve to demonstrate the functional capability of the source range nuclear instruments to respond to changes in core conditions. This change is consistent with NUREG-1430.

M7 The CTS markup was annotated to show adoption of ITS SR 3.9.3.2 and its associated Note. SR 3.9.3.2 requires verification that each required reactor building isolation valve and each reactor building purge isolation valve can actuate to the isolation position with a Frequency of 18 months. This SR demonstrates that each of the reactor building isolation valves are capable of being placed in its closed position. The 18 month surveillance Frequency is commensurate with the normal duration of an operating cycle. The SR Note is administrative in nature in that it establishes that the application of this SR requirement does not apply to valves that have been closed in accordance with ITS LCO 3.9.3.c.1. The CTS does not presently contain such a Surveillance Requirement. Thus, the adoption of this SR results in the ITS being more restrictive than the CTS. This change is consistent with the NUREG-1430.

M8 The CTS markup was annotated to show adoption of ITS SR 3.9.3.1. SR 3.9.3.1 requires verification that each required reactor building penetration is in the required status with a Frequency of 7 days. This SR demonstrates that each of the reactor building penetrations required to be in its closed position is in that position. The 7 day surveillance Frequency is commensurate with the normal duration of fuel handling activities during a refueling. The CTS does not presently contain such a Surveillance Requirement. Thus, the adoption of this SR results in the ITS being more restrictive than the CTS. This change is consistent with the NUREG-1430.

M9 CTS 3.8.10 established the LCO requirements for the reactor building purge isolation system. These requirements are comparable to the LCO requirements of NUREG-1430 3.9.3. However, the CTS does not establish specific required actions or associated completion times should the LCO not be satisfied. ITS 3.9.3 Condition A will establish the Required Actions and associated Completion Times for this LCO in the ITS. The Required Actions remove the unit from the LCO Applicability and eliminate the possibility of fuel handling accident during the period of the inoperable reactor building purge isolation valve(s). The CTS markup was annotated to show ITS 3.9.3 Action A as correlated to CTS 3.8.9 because its contains the intended ITS Actions. This really constitutes the adoption of the ITS Required Actions and Completion Times for Condition A when applied to CTS 3.8.10 LCO requirements. The imposition of the Actions for CTS 3.8.10 will establish additional restrictions that are not present in the CTS. The establishment of Required Actions and associated Completion Times for inoperability of the reactor building purge isolation valves is consistent with NUREG-1430.

M10 The CTS markup was annotated to show adoption of ITS SR 3.9.6.1. SR 3.9.6.1 requires verification that the refueling canal level is greater than or equal to 23 feet above the top of the irradiated fuel assemblies seated within the reactor pressure vessel. This SR demonstrates that the Fuel Handling Accident analysis initial condition assumptions regarding the refueling canal level are satisfied during the movement of irradiated fuel assemblies within the reactor building. The 24 hour surveillance Frequency is considered appropriate in view of the large volume of water and the normal procedural controls in place during fuel handling activities. The CTS does not presently contain such a Surveillance Requirement. Thus, the adoption of this SR results in the ITS being more restrictive than the CTS.

M11 Not used.

M12 CTS Table 4.1-3 is annotated to show the NUREG-1430 SR 3.9.1.1 Frequency of 72 hours. The adoption of the 72 hour Frequency reduces the degree of scheduling freedom present in CTS Table 4.1-3 Item 1.f, Boron Concentration, sampling frequency of 3 times per week. This CTS frequency does not stipulate that the samples obtained at approximately equal intervals. The ITS 72 hour Frequency imposes a more structured requirement with specific sampling intervals that are not as flexible as the CTS Frequency. The adoption of this Frequency establishes requirements that are consistent with NUREG-1430.

M13 CTS 3.8.10 is annotated to show its correlation to ITS SR 3.9.3.3 which specifies a Frequency of 18 months. The 18 month surveillance Frequency is consistent with the refueling frequency when this SR can be performed. Because the CTS established the Frequency based on a time commensurate with refueling activities, the imposition of a fixed 18 month increment will be more restrictive than CTS requirements. In addition, the CTS simply required that the radiation monitors be tested and verified to be OPERABLE. The ITS will specify that this is accomplished by a CHANNEL CALIBRATION. This change is consistent with the NUREG-1430.

TECHNICAL CHANGE -- LESS RESTRICTIVE

L1 CTS 3.8.7 requires that isolation valves in lines containing automatic containment isolation valves be OPERABLE, or at least one shall be closed. ITS 3.9.3.c requires that each penetration providing direct access from the reactor building atmosphere to the outside atmosphere be 1) closed by a manual valve or automatic isolation valve, blind flange, or equivalent, or 2) be capable of being closed by an OPERABLE isolation valve. CTS 3.8.7 requires containment closure capability of components in fluid systems that are ordinarily incapable of releasing radioactive material from the reactor building atmosphere to the outside atmosphere because they are not exposed to the reactor building atmosphere (i.e. the system is intact). ITS 3.9.3 will only apply to those penetrations providing direct access from the reactor building atmosphere to the outside atmosphere. Thus, the scope of the penetrations requiring closure by a manual or power operated isolation valve will be reduced. However, the reduction in scope of penetrations subject to the closure specification will not appreciably change the protective nature of the reactor building. This is because fluid systems that are not open to the reactor building atmosphere have never been a credible release path. Only those penetrations that allow reactor building atmosphere release to the environment are credible offsite dose contributors. Therefore, the reduction in the scope of reactor building penetrations requiring closure still results in the same level of protection for a member of the public. This change is consistent with NUREG-1430.

L2 CTS Table 4.1-3, Item 1.f required the determination of the RCS boron concentration with a Frequency of "3 times per week." The CTS did not establish that these samples were to be obtained on an equal interval. But if they were drawn at equal intervals, the interval would equate to three equal increments of 56 hours each. NUREG-1430 SR 3.9.1.1 specifies a Frequency of 72 hours. The ITS will retain the NUREG Frequency for this SR. This results in the SR being performed less frequently. The less frequent determination of the RCS boron concentration is acceptable based on: 1) administrative actions taken to prevent boron dilution events, 2) the relatively large inventory present during much of the time spent in MODE 6, and 3) historical experience associated with boron concentration changes during refueling conditions. This change is consistent with NUREG-1430.

L3 CTS 3.8.10 requires that the reactor building purge isolation valves "be tested and verified to be operable within 7 days prior to refueling operations." The ITS equivalent Surveillance Requirement is SR 3.9.3.2 which will have a Frequency of 18 months. This can be less restrictive than CTS requirements: 1) if refueling activities should occur on a more frequent or unexpected basis, or 2) if the SR is performed at a time other than refueling which would reestablish the SR interval such that it overlapped refueling activities; thus, avoiding the performance of this SR prior to the subsequent refueling activities. This change is consistent with NUREG-1430.

L4 CTS 3.6.2 established a requirement that reactor building integrity be maintained when the reactor coolant system (RCS) is open to the reactor building atmosphere and the requirements for a refueling shutdown are not met. When combined with the definition of a refueling shutdown (CTS 1.2.6), this establishes a conditional requirement that only exists when the RCS is open to the reactor building atmosphere and the degree of subcriticality is less than 1% $\Delta K/K$ assuming all rods are removed from the core. This reactivity condition is prohibited in the ITS through the imposition of a SHUTDOWN MARGIN requirement in MODE 5 (ITS 3.1.1) and imposition of a required degree of subcriticality ($K_{eff} \leq 0.99$) in MODE 6 (ITS 3.9.1). In both of these ITS Specifications, the Required Actions will be to restore the required SHUTDOWN MARGIN or degree of subcriticality, and while in MODE 6, terminate those activities that may result in the possibility of fission product release to the reactor building atmosphere or otherwise affect the core reactivity condition, for example, CORE ALTERATIONS. Thus, the ITS will be less restrictive than the CTS in that reactor building integrity will not have to be established as a direct result of a loss of SHUTDOWN MARGIN or degree of subcriticality. This change is acceptable because the ITS will direct actions to restore the required SHUTDOWN MARGIN or degree of subcriticality which are not present in the CTS. This change is consistent with NUREG-1430.

L5 CTS 3.8.3 established specific LCO requirements and explicit required actions for Decay Heat Removal. In addition, CTS 3.8.9 established a generic set of required actions for all of the preceding CTS 3.8 series of LCO requirements. CTS 3.8.3 directed that the operator "suspend all operations involving an increase in the reactor decay heat load." CTS 3.8.9 directed that "movement of the fuel into the reactor core shall cease." These actions correspond to ITS 3.9.4 Required Action A.2 which directs the operator to "suspend loading of irradiated fuel assemblies in the core." The ITS will be less restrictive than the CTS 3.8.9 requirements in that it would allow the continued introduction of non-irradiated fuel assemblies. ITS 3.9.4 Required Action A.2 is appropriate because it addresses the unavailability of a decay heat removal system to dissipate the decay heat being generated by the irradiated fuel assemblies within the reactor vessel. Non-irradiated fuel assemblies would not contribute to an increased decay heat load within the reactor vessel. This change is consistent with NUREG-1430.

L6 The CTS 3.8.3.b requirements are revised to allow the DHR pumps to be de-energized for ≤ 15 minutes when switching from one train to another. The addition of this allowance (LCO 3.9.5 Note 1) is acceptable since additional restrictions on application of the allowance are provided by the LCO Note. The circumstances for stopping both DHR pumps are to be limited to situations when the outage time is short and the core outlet temperature is maintained > 10 degrees F below saturation temperature. The Note prohibits boron dilution or draining operations when DHR forced flow is stopped. This change is consistent with NUREG-1430, as modified by generic change TSTF-349, Rev 1.

ANO-244

L7 The CTS 3.8.3.b requirements are revised to allow one DHR loop to be inoperable
ANO-245 for a period of 2 hours provided the other loop is OPERABLE and in operation. The purpose of this allowance is to allow for proper surveillance testing of the DHR systems. The addition of this allowance (LCO 3.9.5 Note 2) is acceptable since its use requires consideration that the core time to boil is short, there is no draining operation to further reduce RCS water level and that capability exists to inject borated water into the reactor vessel. This change is consistent with NUREG-1430, as modified by generic change TSTF-361, Rev 2.

L8 The CTS 3.1.1.1.B, 3.8.3.a and associated footnote, 3.8.3.b, and 3.8.9 requirements
ANO-243 are revised to allow operations that may result in a limited addition of positive reactivity in the event one source range monitor is inoperable, or DHR flow is not available. During these conditions, various unit operations must be continued. RCS inventory must be maintained, and RCS temperature must be controlled. These activities necessarily involve additions to the RCS of cooler water (a positive reactivity effect in most cases) and may involve inventory makeup from sources that are at boron concentrations that are less than the RCS boron concentration. The addition of this allowance (LCO 3.9.2 R.A. A.2, 3.9.4 LCO Note, 3.9.4 R.A. A.1,
3.9-07 and 3.9.5 R.A. B.1) is acceptable, since controls are maintained to provide assurance that the minimum boron concentration, and thus a minimum SDM, is maintained as specified in the COLR. This change is consistent with NUREG-1430, as modified by generic change TSTF-286, Rev 2.

ANO-443 L9 When ANO was originally designed, the movement of a loaded spent fuel shipping cask into or above the Auxiliary Building equipment shaft was to be limited to periods of certain atmospheric dispersion conditions and with the rail spur door shut and the fuel handling area ventilation operating. CTS 3.8.13 requires these conditions to be met in order to allow carrying loaded spent fuel shipping casks above or into the auxiliary building equipment shaft in support of shipping spent fuel off-site for testing or other purposes. ANO has not needed to ship spent fuel off-site for 10 years. Furthermore, the CTS conditions for movement of loaded spent fuel shipping casks are based on the type and amount of spent fuel being transported. The CTS requirements are unique and considered historical in nature, because any future shipment will likely deviate in both fuel type and amount. Although cask drop events that may result during the handling of cask shipments are considered in the fuel handling accident (FHA) analysis (SAR Section 9.6.2), future shipments will
ANO-443 require re-evaluation for the type and amount of fuel involved and will likely require prior-NRC approval in accordance with 10 CFR 50.59. Even if the current analysis indicated that the assumed future shipment was acceptable without further re-analysis, prior-NRC approval remains required in accordance with 10 CFR Part 71. Because the CTS requirements are historical in nature and adequate control is afforded by other regulations as described above, these restrictions are proposed for deletion from the technical specifications.

LESS RESTRICTIVE -- ADMINISTRATIVE DELETION OF REQUIREMENTS

LA1 This information has been moved to the Bases or TRM. This information provides details of design or process which are not directly pertinent to the actual requirement, i.e., Definition, Limiting Condition for Operation or Surveillance Requirement, but rather describe an acceptable method of compliance. Since these details are not necessary to adequately describe the actual regulatory requirement, they can be moved to a licensee controlled document without a significant impact on safety. Placing these details in controlled documents provides adequate assurance that they will be maintained. The Bases will be controlled by the Bases Control Process in Chapter 5 of the proposed Technical Specifications. The details of performance of the surveillances have been relocated to the TRM. Changes to the TRM will be controlled by 10 CFR 50.59. This change is consistent with NUREG-1430.

ANO-447

CTS Location	New Location
3.1.1.1.B	Bases, 3.9.4 & 3.9.5 LCO
3.8.2	Bases, 3.9.2, Background
3.8.6 Note *	Bases, 3.9.3, Background, LCO

LA2 CTS 3.8.11 is being relocated to the TRM. This Specification places restrictions on the removal of irradiated fuel from the reactor to ensure that sufficient time will elapse to allow the radioactive decay of short-lived fission products.

Although the Specification satisfied Criterion 2 of 10 CFR 50.36, the time to perform necessary activities prior to commencing movement of irradiated fuel ensures that there will normally be greater than 100 hours of subcriticality before any movement of irradiated fuel. Hence, the Specification is relocated in accordance with a prior industry/NRC agreement in the generic split report. Changes to the TRM are controlled under 10 CFR 50.59. This change is consistent with NUREG-1430.

CTS DISCUSSION OF CHANGES

ITS Section 4.0: Design Features

ADMINISTRATIVE

A1 The designated change represents a non-technical, non-intent change to the Arkansas Nuclear One, Unit 1 Current Technical Specifications (CTS) made to make the ANO-1 Improved Technical Specifications (ITS) consistent with the Babcock and Wilcox (B&W) revised Standard Technical Specification (RSTS), NUREG-1430, Revision 1. This change does not alter the requirements of the CTS or RSTS. Examples of this type of change include: wording preference; convention adoption; editorial, numbering and formatting changes; and hierarchy structure.

ANO-422 A2 Although no bases exist for ITS Sections 4.0 and 5.0, several CTS markup pages containing material relavent to these sections contain bases statements. These statements are identified with reference to DOC A2 and are deleted in favor of the associated STS Bases and incorporated into the appropriate ITS Bases sections. Applicable technical content within the CTS Base is retained in the appropriate ITS Bases sections.

A3 The "less than" requirements for k_{eff} ,in CTS 5.4.1.1, have been revised to ≤ in ITS 4.3.1.2. These are considered to be essentially equivalent since the parameter can be less than than the limit, but be so close as to be imperceptible. This change is consistent with design basis and with NUREG-1430.

A4 The statement regarding the applicability of the provisions of Specification 3.0.3 is not retained. This statement is no longer required since the Specification is moved to the Design Features section for which LCO 3.0.3 is not applicable. Since there is no change in the application of the requirements, this change is considered administrative.

A5 Not used.

A6 Not used.

TECHNICAL CHANGE -- MORE RESTRICTIVE

M1 CTS 5.4.2 is revised to include additional information to describe the nominal center to center distance between fuel assemblies placed in the spent fuel storage racks. This change provides a safe geometric spacing in the spent fuel storage racks. There are only high density spent fuel storage racks provided at ANO-1 as discussed in SAR Section 9.6.2.3. Therefore, there is no need to differentiate between high density and low density racks in ITS 4.3.1, nor to provide any information on low density storage racks pursuant to RSTS 4.3.1.1.d. This change is consistent with RSTS 4.3.1.1.c.

M2 CTS 5.4.2 is revised to include additional information described in NUREG 4.3.2 and
4.0-02 4.3.3 concerning the number of available storage containers and the minimum drainage level of the ANO-1 spent fuel pool. This change ensures the aforementioned pool designs are maintained and controlled within ITS and is consistent with NUREG-1430.

CTS DISCUSSION OF CHANGES

TECHNICAL CHANGE -- LESS RESTRICTIVE

L None

LESS RESTRICTIVE -- ADMINISTRATIVE DELETION OF REQUIREMENTS

LA1 This information has been moved to a licensee controlled document such as the Technical Requirements Manual (TRM), Safety Analysis Report (SAR), etc. This information provides details of the method of implementation which are not directly pertinent to the actual requirement. Since these details are not necessary to adequately describe the actual regulatory requirement, they can be moved to a licensee controlled document without a significant impact on safety. Placing these details in controlled documents provides adequate assurance that they will be maintained. The details relocated to the TRM will be controlled by 10 CFR 50.59. The details relocated to the SAR will be controlled by 10 CFR 50.59 and 50.71. This change is consistent with NUREG-1430.

	CTS Location	New Location
	5.1	SAR 1.2.1
	5.1	SAR 2.2
	5.2.1	SAR 5.2.1
	5.2.1	SAR 14.2.2.5.5
	5.2.2	SAR 5.2.5
	5.2.3	SAR 6.5
	5.3.1.2	SAR Table 3-2
	5.3.1.2	SAR 3.2.2.1.1
	5.3.1.3	SAR Table 3-2
	5.3.1.4	SAR 3.2.1
	5.3.1.4	SAR Fig. 3-60
	5.3.1.4	SAR 3A.3
	5.3.1.4	SAR Fig. 3A-4
	5.3.1.5	SAR 3.2.4.2
	5.3.1.5	SAR Fig. 3-2
ANO-448	5.3.1.6	SAR 9.6.2.4.3.1.1
	5.3.2.1	SAR 4.1.3
	5.3.2.2	SAR 4.1.2
	5.3.2.3	TRM
ANO-448	5.4.1.1	SAR 9.6.1.2
	5.4.1.1	TRM
	5.4.1.2	SAR 9.6.2.1
	5.4.2.2	SAR 5.1.2.1.2

CTS DISCUSSION OF CHANGES

ITS Section 5.0: Administrative Controls

ADMINISTRATIVE

A1 The designated change represents a non-technical, non-intent change to the Arkansas Nuclear One, Unit 1 Current Technical Specifications (CTS) made to make the ANO-1 Improved Technical Specifications (ITS) consistent with the Babcock and Wilcox (B&W) revised Standard Technical Specification (RSTS), NUREG-1430, Revision 1 and 10 CFR Part 20. This change does not alter the requirements of the CTS or RSTS. Examples of this type of change include: wording preference; convention adoption; editorial, numbering and formatting changes; and hierarchy structure.

ANO-422 A2 Although no bases exist for ITS Sections 4.0 and 5.0, several CTS markup pages containing material relavent to these sections contain bases statements. These statements are identified with reference to DOC A2 and are deleted in favor of the associated STS Bases and incorporated into the appropriate ITS Bases sections. Applicable technical content within the CTS Base is retained in the appropriate ITS Bases sections.

A3 A statement regarding the Applicability of SR 3.0.2 and SR 3.0.3 is added for clarification that the allowances provided by these general Surveillance Requirements are applicable to the identified program. This is an administrative change since the CTS 4.0.2 and 4.0.3 are currently applicable to the requirements being moved to the program that will be identified in the Administrative Controls (Section 5). This change is applicable for CTS 4.2.6 which is to be incorporated into the Reactor Coolant Pump Flywheel Inspection Program, ITS 5.5.7, and to CTS 4.10, 3.13, and 3.15 which are to be incorporated into the Ventilation Filter Testing Program, ITS 5.5.11. This change is also applicable for CTS 3.24, 3.25.1 and 3.25.2 which are to be incorporated into the Explosive Gas and Storage Tank Radioactivity Monitoring Program, ITS 5.5.12, and to CTS 4.6.1.4.e which is to be incorporated into the Diesel Fuel Oil Testing Program, ITS 5.5.13. Additionally, this change is applicable for CTS 4.0.5 which is to be incorporated into the Inservice Testing Program, ITS 5.5.8.

A4 CTS 4.18.6 and Table 4.18-2 reference to a Special Report are removed from the markup to show the editorial removal of cross references in the ITS. This is considered an administrative change because ITS 5.6.7 will continue to have the additional reporting requirements prescribed in the "special" report. This is considered editorial and no change in requirements are associated with this change. This change is consistent with NUREG-1430.

A17 CTS 6.8.5 is updated to reflect the latest changes to 10 CFR Part 20. The changes maintain the same overall level of effluent control while retaining the operational flexibility that currently exists. The Specification continues to provide reasonable assurance that acceptable limits will be maintained and eliminate possible confusion or improper implementation of the revised 10 CFR Part 20 requirements. Additionally, consistent with the intent of performing periodic surveillances, a statement regarding the Applicability of SR 3.0.2 and SR 3.0.3 is added. Since no change to the regulatory requirements is made this change is considered administrative.

ANO-402

ANO-345

A18 Not used.

ANO-402

A19 Not used.

ANO-354

ANO-426

A20 Three existing license conditions are moved to equivalent programmatic requirements in ITS Section 5.5, Programs and Manuals. The requirements of these License Conditions for Systems Integrity, Iodine Monitoring, and Secondary Water Chemistry will be retained in ITS Section 5.5. These ITS programmatic administrative controls specifications are consistent with the STS and current plant practice and meet the intent of the existing license conditions. As such, this change in presentation of existing requirements is purely administrative.