Technical Specifications Introduction

R504B – Chapter 3.0

Objectives

1. Recognize the purpose of Station Technical Specifications
2. Recognize the attributes of the three different Technical Specification formats currently in use.
3. Recognize the meaning of the terms listed in the Improved Standard Technical Specifications (ISTS) in Section 1.1, Definitions.
4. Given the ISTS and a specific set of plant conditions, determine which MODE the unit is operating in.

Objectives

5. Given the Improved Standard Technical Specifications and the TS Bases, a specific set of plant conditions, and system training, apply the following ISTS sections to determine the required actions of the licensee:
   a. Definitions in section 1.1
   b. The use of Logical Connectors in section 1.2
   c. Completion Time guidance in section 1.3
   d. Surveillance Frequency guidance in section 1.4
   e. Safety Limit guidance of section 2.0
   f. General LCO guidance of section 3.0
   g. General SR guidance of section SR 3.0
   h. Specific LCO and SR guidance of sections 3.1 through 3.10
   i. Design Feature guidance of section 4.0
   j. Administrative Controls guidance of section 5.0

Purpose

To protect the health and safety of the public by imposing limits, operating conditions and other requirements on the facility.

Technical specifications define the limits of plant operation to ensure that the plant is operated within those boundaries established by the Safety Analysis.

10CFR-50.36
TECHNICAL SPECIFICATIONS

- The technical specifications will be derived from the analyses and evaluation included in the safety analysis report
- Part of PSAR (Chapter 16) during license application
- Standard format of FSAR in RG 1.70, superseded by NUREG 0800, SRP
- Attachment to the Facility Operating License when license granted

Types of Technical Specifications

Custom (Table 3.0-1)

- Format chosen by the facility
- Nine 1, Oyster Creek, Pilgrim, Vermont Yankee

Standard Technical Specifications (Table 3.0-2)

- Introduced in the Mid 1970's
- Joint effort by industry and commission (NUREG-0123)
- Provided some consistency to the industry
- Hope Creek and Limerick

Types of Technical Specifications

Improved STS (Table 3.0-3)

- Introduced in the 1980's and implemented in the 1990's
- Joint effort by industry and commission (NUREG-1433)
- Some licensees are or will fully implement
- Some licensees are only implementing selected sections
- **Plant specific values in [brackets]**
- **NUREG-1433, Rev. 3 used in 504B**

Improved STS

- Material that did not meet the screening criteria of 10CFR50.36 was relocated out of the specifications
- Reduced the amount of time for NRC review of license amendments (NRC can grant generic approval).
- Reduced the number of surveillances and changed the frequencies.
- Improved human factors by standardizing definitions and usage along with regrouping/organizing the specifications.
- Improved Bases – Bases must be linked to the requirement/FSAR; providing a clearer understanding for the significance of the specification.

Improved STS

Technical Requirements Manual (TRM)

- Contains the LCO items once included in TSs.
- Same format and rules of usage as STS.
- Includes a TRM Bases document (not always)
- Can include other items that were removed (e.g., COLR) or other items for operational convenience, such as lists, cross references, acceptance criteria, and drawings.
- Changes do not necessarily required NRC approval

Fire Protection Program removed from TS and referenced directly by the license.

Improved STS

Many items relocated to new owner controlled documents and programs (that don't necessarily need NRC approval to change) and referenced by ISTS:

- T/S Bases Program
- Offsite Dose Calculation Manual
- Pressure Temperature Limit Report
- Primary Containment Leakage Rate Program
- Ventilation Filter Testing Program
- Explosive Gas Monitoring Program
- ISI and IST Programs
- Process Control Program (solid radwaste control)

10CFR-50.36
TECHNICAL SPECIFICATIONS

- Contents shall include:
  - Safety Limits (SL)
  - Limiting Safety System Settings (LSSS)
  - Limiting Conditions for Operation (LCO)
  - Surveillance Requirements (SR)
  - Facility Design Features
  - Administrative Controls

Safety Limits

Safety limits are limits upon important process variables that are found to be necessary to reasonably protect the integrity of certain of the physical barriers that guard against the uncontrolled release of radioactivity.

- Cladding
- RCS Pressure Boundary

2.0 SAFETY LIMITS (SLs)

2.1 SLs

2.1.1 Reactor Core SLs

2.1.1.1 With the reactor steam dome pressure < 785 psig or core flow < 10% rated core flow:

THERMAL POWER shall be ≤ 25% RTP.

2.1.1.2 With the reactor steam dome pressure ≥ 785 psig and core flow ≥ 10% rated core flow:

MCPR shall be ≥ [1.07] for two recirculation loop operation or ≥ [1.08] for single recirculation loop operation.

2.1.1.3 Reactor vessel water level shall be greater than the top of active irradiated fuel.

2.1.2 Reactor Coolant System Pressure SL

Reactor steam dome pressure shall be ≤ 1325 psig.

2.2 SL VIOLATIONS

With any SL violation, the following actions shall be completed within 2 hours:

2.2.1 Restore compliance with all SLs; and

2.2.2 Insert all insertable control rods.

Safety Limits

In addition to the TS actions, per 10 CFR 50.36, if any safety limit is exceeded,

- the reactor must be shut down.
- the licensee shall notify the Commission,
- the licensee shall review the matter, and record the results of the review, including the cause of the condition and the basis for corrective action taken to preclude recurrence.
- **Operation must not be resumed until authorized by the Commission.**

Safety Limits

Operational Limits applied to prevent exceeding Safety Limits

- More limiting LCO
  - Rx Steam Dome Pressure LCO 3.4.11
  - MCPR LCO 3.2.2
- RPS, ECCS, and/or NSSSS setpoints
  - Rx Power
  - Vessel level
  - Rx Steam Dome Pressure
  - Main Steam Line Pressure

Safety Limits

Which two TS required functions help to ensure SL 2.1.1.1 is not violated? (Hint: Search the TS Bases document with "2.1.1.1")

- TS 3.3.1.1, Function 2a, APRM Neutron Flux – Setdown

- TS 3.3.6.1, Function 1b, Main Steam Isolation on Main Steam Line Pressure Low.

Safety Limits

The RCS design pressure is 1250 psig. What is the basis for establishing the Safety Limit at 1325 psig?

- From the Bases for SL 2.1.2, the pressure limit is 110% of the design pressure of 1250 psig which would be 1375 psig.
- The maximum pressure measured in the steam dome would be 1325 psig which would result in 1375 psig at the lowest elevation of the RCS [due to the height of water in the vessel].

Limiting Conditions for Operation

Limiting conditions for operation are the lowest functional capability or performance levels of equipment required for safe operation of the facility.

Contained in Section 3

- 3.0 series provides general usage rules
- 3.1-3.10 contains individual system LCOs

Limiting Conditions for Operation

Required to be in TS if:

- *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. (RCS Leak Detection Systems)
- *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. (RCS Pressure, SP Temperature)

Limiting Conditions for Operation

Required to be in TS if:

- *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. (ECCS, RPS)
- *Criterion 4*. A structure, system, or component which operating experience or probabilistic risk assessment has shown to be significant to public health and safety. (ATWS-RPT)

Limiting Safety System Settings

Limiting safety system settings for nuclear reactors are settings for automatic protective devices related to those variables having significant safety functions.

Contained in Section 3.3, Instrumentation

- RPS Setpoints
- ECCS Setpoints
- NSSSS Setpoints

Surveillance Requirements

Surveillance requirements are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met.

Contained in Section 3

- SR 3.0 series provides general usage rules
- 3.1-3.10 contains individual system SRs needing to be met for the LCO to be met

Design Features

Design features to be included are those features of the facility such as materials of construction and geometric arrangements, which, if altered or modified, would have a significant effect on safety and are not covered in SL, LCO or SR sections.

Contained in Section 4

- Site requirements
- Fuel and control rods in core
- Spent fuel pool design and capacity

Design Features

What is the maximum number of fuel assemblies that can be loaded in the Spent Fuel Pool?

How many fuel assemblies and control rods are contained in the core?

What is the maximum effective multiplication factor for fuel stored in the spent fuel pool?

Administrative Controls

The provisions relating to organization and management, procedures, recordkeeping, review and audit, and reporting necessary to assure operation of the facility in a safe manner.

Contained in Section 5

- Responsibility, Organization and Qualification
- Procedures
- Programs and Manuals
- Reporting Requirements
- High Radiation Area

Administrative Controls

When must a Radiation Protection Technician be on site?

When can a change to the TS Bases be made without NRC approval?

Improved STS

Five Main Sections in ISTS:

1. Use and Application
2. Safety Limits
3. Limited Condition for Operation and Surveillance Requirements
4. Design Features
5. Administrative Controls

Bases covers Safety Limits and LCO/SR

Improved Standard Tech Specs

1.1	Definitions
1.2	Logical Connectors
1.3	Completion Times
1.4	Frequency
2.0	Safety Limits
3.0	LCO and SR Applicability
3.1-3.10	Limiting Conditions for Operation and Surveillance Requirements
4.0	Design Features
5.0	Administrative Controls
B 2.0	Safety Limit Bases
B 3.0	LCO Applicability Bases
B 3.1-3.10	Limiting Conditions for Operation and Surveillance Requirements Bases

Standard LCO

LCO:

- Equipment Required to meet the LCO

APPLICABILITY:

- Under which MODES or other conditions the LCO must be met

ACTIONS:

- Conditions
- Required Actions
- Completion Time

3.1 REACTIVITY CONTROL SYSTEMS

3.1.8 Scram Discharge Volume (SDV) Vent and Drain Valves

LCO 3.1.8 Each SDV vent and drain valve shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTIONS

----------NOTES----------

1. Separate Condition entry is allowed for each SDV vent and drain line.

2. An isolated line may be unisolated under administrative control to allow draining and venting of the SDV.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more SDV vent or drain lines with one valve inoperable.	A.1 Isolate the associated line.	7 days
B. One or more SDV vent or drain lines with both valves inoperable.	B.1 Isolate the associated line.	8 hours
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3.	12 hours

Standard SR

SURVEILLANCE:

- Describes the surveillance

FREQUENCY:

- How often or under what circumstances the surveillance must be completed

  Typically, failure to meet a SR, is failure to meet the LCO (more later)

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.1.8.1	----------NOTE---------- Not required to be met on vent and drain valves closed during performance of SR 3.1.8.2. ---------- Verify each SDV vent and drain valve is open.	31 days
SR 3.1.8.2	Cycle each SDV vent and drain valve to the fully closed and fully open position.	92 days
SR 3.1.8.3	Verify each SDV vent and drain valve: a. Closes in ≤ [60] seconds after receipt of an actual or simulated scram signal and b. Opens when the actual or simulated scram signal is reset.	[18] months

TS BASES

Contains amplifying information for Safety Limits and LCO/SR sections of the ISTS

- Background
- Applicable Safety Analysis
- LCO (defining a subsystem)
- Applicability
- Each Required Action
- Each Surveillance Requirement
- References

Improved STS
Lets look at these Sections

1.1	Definitions
1.2	Logical Connectors
1.3	Completion Times
1.4	Frequency
3.0	LCO and SR Applicability

The individual LCOs will be presented separately throughout this course

Use and Application

Definitions (Section 1.1):

- In ALL CAPITALS when used in TS
- Includes Operating MODES
- Let's look at a few:
  - CORE ALTERATION
  - CORE OPERATING LIMITS REPORT (COLR)
  - LEAKAGE
  - MODE
  - OPERABLE-OPERABILITY
  - RATED THERMAL POWER
  - SHUTDOWN MARGIN (SDM)

Can be modified by Special Operations in Section 3.10

MODE	TITLE	REACTOR MODE SWITCH POSITION	AVERAGE REACTOR COOLANT TEMPERATURE (°F)
1	Power Operation	Run	NA
2	Startup	Refuel[(a)] or Startup/Hot Standby	NA
3	Hot Shutdown[(a)]	Shutdown	> [200]
4	Cold Shutdown[(a)]	Shutdown	≤ [200]
5	Refueling[(b)]	Shutdown or Refuel	NA

(a) All reactor vessel head closure bolts fully tensioned.

(b) One or more reactor vessel head closure bolts less than fully tensioned.

Use and Application

A pressure instrument is adjusted such that for each simulated pressure input, the current output is in the required range and accuracy. This is an example of a:

A. CHANNEL CALIBRATION
B. CHANNEL CHECK
C. CHANNEL FUNCTIONAL TEST
D. LOGIC SYSTEM FUNCTIONAL TEST

Use and Application

With the unit at 20% RTP, a reactor trip occurs and the Mode Switch is placed in Shutdown. What MODE was the plant in before and after the trip?

Use and Application

Logical Connectors (Section 1.2):

- Use AND and OR
- Always capitalized and underlined
- Indentation and numbering
- Let's look at Example 1.2-2

EXAMPLE 1.2-2

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. LCO not met.	A.1 Trip . . . OR A.2.1 Verify . . . AND A.2.2.1 Reduce . . . OR A.2.2.2 Perform . . . OR A.3 Align . . .	When Condition A is entered, either A.1 OR A.2 OR A.3 must be taken. If A.2 is chosen then A.2.1 must be taken AND in addition either A.2.2.1 OR A.2.2.2 must also be taken

Use and Application

Completion Time (Section 1.3):

- Listed for each LCO Required Action for each Condition entered
- Referenced to the time that the Condition is entered
  - May stipulate a concurrent condition (“from discovery of”), called “Modified time zero”.
- Each Required Action Completion Time tracked separately.

EXAMPLE 1.3-7

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One subsystem inoperable.	A.1 Verify affected subsystem isolated. AND A.2 Restore subsystem to OPERABLE status.	1 hour AND Once per 8 hours thereafter 72 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	12 hours 36 hours

3.1 REACTIVITY CONTROL SYSTEMS

3.1.5 Control Rod Scram Accumulators

LCO 3.1.5 Each control rod scram accumulator shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTIONS

---NOTE---

Separate Condition entry is allowed for each control rod scram accumulator.

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Two or more control rod scram accumulators inoperable with reactor steam dome pressure ≥ [900] psig.	B.1 Restore charging water header pressure to ≥ [940] psig.	20 minutes from discovery of Condition B concurrent with charging water header pressure < [940] psig

Use and Application

While in MODE 1, an ADS valve becomes inoperable. What condition(s) in TS 3.5.1 must be entered?

An hour after the original ADS valve failure, a second ADS valve is found to be inoperable. What condition(s) in TS 3.5.1 should be entered?

An hour later, HPCI becomes inoperable. With HPCI and 2 ADS valves inoperable, what condition(s) in TS 3.5.1 should the licensee be in?

Use and Application

Frequency (Section 1.4):

- Listed for each SR
- Normally a periodicity listed
- Can list situational requirement (e.g., prior to MODE 2)
- SR only required to be met when LCO is applicable
- Does an SR have to be “performed” for the SR not to be “met”?

	SURVEILLANCE	FREQUENCY
SR 3.1.4.1	Verify each control rod scram time is within the limits of Table 3.1.4-1 with reactor steam dome pressure ≥ [800] psig.	Prior to exceeding 40% RTP after each reactor shutdown ≥ 120 days
SR 3.1.4.2	Verify, for a representative sample, each tested control rod scram time is within the limits of Table 3.1.4-1 with reactor steam dome pressure ≥ [800] psig.	[200] days cumulative operation in MODE 1

What is a representative sample?

From the Bases for SR 3.1.4.2:

SR 3.1.4.2

Additional testing of a sample of control rods is required to verify the continued performance of the scram function during the cycle. A representative sample contains at least 10% of the control rods. The sample remains representative if no more than 7.5% of the control rods in the sample tested are determined to be "slow." With more than 7.5% of the sample declared to be "slow" per the criteria in Table 3.1.4-1, additional control rods are tested until this 7.5% criterion (e.g., 7.5% of the entire sample size) is satisfied, or until the total number of "slow" control rods (throughout the core, from all surveillances) exceeds the LCO limit. For planned testing, the control rods selected for the sample should be different for each test. Data from inadvertent scrams should be used whenever possible to avoid unnecessary testing at power, even if the control rods with data may have been previously tested in a sample. The [200] day Frequency is based on operating experience that has shown control rod scram times do not significantly change over an operating cycle. This Frequency is also reasonable based on the additional Surveillances done on the CRDs at more frequent intervals in accordance with LCO 3.1.3 and LCO 3.1.5, "Control Rod Scram Accumulators."

Rules of Usage

LCO 3.0.1 and 3.0.2

LCO 3.0.1	LCOs shall be met during the MODES or other specified conditions in the Applicability, except as provided in LCO 3.0.2, LCO 3.0.7, and LCO 3.0.8.
LCO 3.0.2	Upon discovery of a failure to meet an LCO, the Required Actions of the associated Conditions shall be met, except as provided in LCO 3.0.5 and LCO 3.0.6. If the LCO is met or is no longer applicable prior to expiration of the specified Completion Time(s), completion of the Required Action(s) is not required, unless otherwise stated.

Rules of Usage

The “A” diesel is declared inoperable and Condition B of TS 3.8.1 is entered. If the diesel is repaired and tested in 8 hours, before either Required Action B.3.1or B.3.2 is completed, must one of them be completed in order to exit Condition B?

Rules of Usage

LCO 3.0.3

When an LCO is not met and the associated ACTIONS are not met, an associated ACTION is not provided, or if directed by the associated ACTIONS, the unit shall be placed in a MODE or other specified condition in which the LCO is not applicable. Action shall be initiated within 1 hour to place the unit, as applicable, in:

a. MODE 2 within [7] hours,

b. MODE 3 within 13 hours, and

c. MODE 4 within 37 hours.

Exceptions to this Specification are stated in the individual Specifications.

Where corrective measures are completed that permit operation in accordance with the LCO or ACTIONS, completion of the actions required by LCO 3.0.3 is not required.

LCO 3.0.3 is only applicable in MODES 1, 2, and 3.

Rules of Usage

LCO 3.0.4

When an LCO is not met, entry into a MODE or other specified condition in the Applicability shall only be made:

a. When the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time;

b. After performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering the MODE or other specified condition in the Applicability, and establishment of risk management actions, if appropriate; exceptions to this Specification are stated in the individual Specifications, or

c. When an allowance is stated in the individual value, parameter, or other Specification.

This Specification shall not prevent changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

Rules of Usage

Can the unit change from MODE 4 to MODE 2 if:

a. One of the 2 required Post-Accident Monitoring Vessel Level Instruments in not OPERABLE?

   Yes. TS 3.3.3.1 allows continued operation.

b. One train of SLC is not OPERABLE?

   Yes. If justified by risk assessment in LCO 3.0.4.b

c. RCIC is not OPERABLE?

   Yes, since LCO 3.5.3 not applicable when < 150 psig. However, cannot exceed 150 psig since 3.0.4.b not allowed for RCIC

d. RCS Specific Activity is 3.0 µCi/gm DOSE EQUIVALENT I-131 with the MSIVs open?

   Yes, LCO 3.4.7 allows transition in Condition A

Rules of Usage

LCO 3.0.5

Equipment removed from service or declared inoperable to comply with ACTIONS may be returned to service under administrative control solely to perform testing required to demonstrate its OPERABILITY or the OPERABILITY of other equipment. This is an exception to LCO 3.0.2 for the system returned to service under administrative control to perform the testing required to demonstrate OPERABILITY.

Rules of Usage

OPERABILITY (from Definitions):

A system, subsystem, division, component, or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified safety function(s) and when all necessary attendant instrumentation, controls, normal or emergency electrical power, cooling and seal water, lubrication, and other auxiliary equipment that are required for the system, subsystem, division, component, or device to perform its specified safety function(s) are also capable of performing their related support function(s).

Rules of Usage

LCO 3.0.6

When a supported system LCO is not met solely due to a support system LCO not being met, the Conditions and Required Actions associated with this supported system are not required to be entered. Only the support system LCO ACTIONS are required to be entered. This is an exception to LCO 3.0.2 for the supported system. In this event, an evaluation shall be performed in accordance with Specification 5.5.12, "Safety Function Determination Program (SFDP)." If a loss of safety function is determined to exist by this program, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered.

When a support system's Required Action directs a supported system to be declared inoperable or directs entry into Conditions and Required Actions for a supported system, the applicable Conditions and Required Actions shall be entered in accordance with LCO 3.0.2.

Rules of Usage

LCO 3.0.6 allows the utility to avoid “cascading TS”.
When a service water subsystem is inoperable, you don’t have to take the action for the supported systems (diesel, suppression pool cooling, etc…).
Only have to enter the Conditions and Required Actions for the support system (service water) and NOT the supported systems if:

- An evaluation is performed under the Safety Function Determination Program
- There is no loss of safety function

Otherwise, the Required Actions for the Supported systems must be entered as well.

Rules of Usage

Support System	Supported System
1. RCIC Instrumentation	1. RCIC
2. Diesel Fuel Oil	2. Diesel
3. Diesel	3. RHRSW and RHR Pumps
4. RHRSW	4. SDC SP Cooling SP Spray LPCI Diesels

Rules of Usage

LCO 3.0.7

Special Operations LCOs in Section 3.10 allow specified Technical Specifications (TS) requirements to be changed to permit performance of special tests and operations. Unless otherwise specified, all other TS requirements remain unchanged. Compliance with Special Operations LCOs is optional. When a Special Operations LCO is desired to be met but is not met, the ACTIONS of the Special Operations LCO shall be met. When a Special Operations LCO is not desired to be met, entry into a MODE or other specified condition in the Applicability shall only be made in accordance with the other applicable Specifications.

Rules of Usage

LCO 3.0.8

When one or more required snubbers are unable to perform their associated support function(s), any affected supported LCO(s) are not required to be declared not met solely for this reason if risk is assessed and managed, and:

a. the snubbers not able to perform their associated support function(s) are associated with only one train or subsystem of a multiple train or subsystem supported system or are associated with a single train or subsystem supported system and are able to perform their associated support function within 72 hours; or

b. the snubbers not able to perform their associated support function(s) are associated with more than one train or subsystem of a multiple train or subsystem supported system and are able to perform their associated support function within 12 hours.

At the end of the specified period the required snubbers must be able to perform their associated support function(s), or the affected supported system LCO(s) shall be declared not met.

Rules of Usage

SR 3.0.1

SRs shall be met during the MODES or other specified conditions in the Applicability for individual LCOs, unless otherwise stated in the SR. Failure to meet a Surveillance, whether such failure is experienced during the performance of the Surveillance or between performances of the Surveillance, shall be failure to meet the LCO. Failure to perform a Surveillance within the specified Frequency shall be failure to meet the LCO except as provided in SR 3.0.3. Surveillances do not have to be performed on inoperable equipment or variables outside specified limits.

Failure to meet a SR is failure to meet the LCO

Rules of Usage

SR 3.0.2

The specified Frequency for each SR is met if the Surveillance is performed within 1.25 times the interval specified in the Frequency, as measured from the previous performance or as measured from the time a specified condition of the Frequency is met.

For Frequencies specified as "once," the above interval extension does not apply.

If a Completion Time requires periodic performance on a "once per . . ." basis, the above Frequency extension applies to each performance after the initial performance.

May also be applied to Completion Times in some instances

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
Verify flow is within limits.	Once within 12 hours after ≥ 25% RTP AND 24 hours thereafter

EXAMPLE 1.3-7

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One subsystem inoperable.	A.1 Verify affected subsystem isolated. AND A.2 Restore subsystem to OPERABLE status.	1 hour AND Once per 8 hours thereafter 72 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	12 hours 36 hours

Rules of Usage

SR 3.0.3

If it is discovered that a Surveillance was not performed within its specified Frequency, then compliance with the requirement to declare the LCO not met may be delayed, from the time of discovery, up to 24 hours or up to the limit of the specified Frequency, whichever is greater. This delay period is permitted to allow performance of the Surveillance. A risk evaluation shall be performed for any Surveillance delayed greater than 24 hours and the risk impact shall be managed.

If the Surveillance is not performed within the delay period, the LCO must immediately be declared not met, and the applicable Condition(s) must be entered.

When the Surveillance is performed within the delay period and the Surveillance is not met, the LCO must immediately be declared not met, and the applicable Condition(s) must be entered.

Rules of Usage

SR 3.0.3 allows the utility to avoid entering the Required Actions immediately if a Surveillance was missed.

The time starts when it is discovered the surveillance was missed, not when it should have been done.

Can delay SR performance for 24 hours without considering LCO not met, or up to the full surveillance frequency if risk assessment is done and the risk is managed.

Should be completed “at the first reasonable opportunity”.

SR 3.8.1.1 is used to help assess the OPERABILITY of off-site power sources.

If it is discovered the SR was last completed 8 days ago, is the LCO met? What if it was 12 days ago?
8 Days: Yes, still within the grace period of SR 3.0.2
12 Days: Yes for up to 24 hours or 7 days if a risk assessment is completed per SR 3.0.3

LCO 3.8.1.1, Condition A is entered and ACTIONS A.1, A.2 and A.3 are entered. The next day the shift discovers that SR 3.8.1.1 was last completed 12 hours ago. What are the Required Actions?
Required Action A.1 not met, either enter Condition C or G in addition to Condition A. Can exit them when SR completed and Required Action A.1 is met.

Rules of Usage

SR 3.0.4

Entry into a MODE or other specified condition in the Applicability of an LCO shall only be made when the LCO's Surveillances have been met within their specified Frequency, except as provided by SR 3.0.3. When an LCO is not met due to Surveillances not having been met, entry into a MODE or other specified condition in the Applicability shall only be made in accordance with LCO 3.0.4.

This provision shall not prevent entry into MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

FOR ANY T/S RELATED PROBLEM

- Review TOC for potential LCO(s)
- Review applicability of LCO(s)
- Review LCO and bases
- Review SR's and bases
- Apply definitions (ALL CAPS)
- Apply T/S motherhood statements
- Identify the required actions

Sample Problems

STS and Bases provided during exam

≈10 questions of 50 on the exam will be on TS

During each lecture, open ended questions will be asked and discussed (Appendix in manual, summary of discussion provided)

After each TS Section lecture Sample Problems will be distributed

Try to complete them using the TS and TS Bases

Answers will be discussed on the following day.

Questions?