Topic No.	Comment No(s).	Topic Summary	Topic Types
1	1, 2, 5, 13, 16, 515, 516, 517	Disagreement about TSTF disposition determination (TSTF-51, TSTF-522, TSTF-523, TSTF-425, TSTF-490, TSTF-500, TSTF-510)	T6
2	5, 11, 12, 13, 15, 16, 24, 515, 516, 517	Meaning of "TSTF deferred for future consideration"; does it mean creating a new AP1000-specific topical report (to justify AP1000-specific changes) in place of the topical report referenced in the traveler? And does it mean an AP1000-specific TSTF needs to be submitted? (TSTF-51, TSTF-359, TSTF-372, TSTF-425, TSTF-437, TSTF-490, TSTF-500, TSTF-510)	T2 T5
3	11, 12, 13, 14,	Disagreement about inclusion of risk-initiative TSTFs in STS Rev 0 (TSTF-359-A, TSTF-372-A, TSTF-425-A, TSTF-427)	P6
4	16, **478**	Disagreement about inclusion of TSTF-500	A3 T2 T5 P3 P5
5	29	How to use Word to implement the 2.1.5.c guidance regarding logical connector indentation? "Primary-level logical connectors are flush left. Subsequent levels are indented to align all levels, except the primary-level, with the numerical digit associated with that nesting level."	A2
6	48, 56, 119, 129, 136, 137, 258, 260, 293, 297, 300, 333, 334, 336, 353, 370, 377, 432, 477, 478, 491, 521	SPSB proposed editorial change in place of, or in addition to, an APOG or TSTF proposed editorial change, *which may need discussion with APOG*. (TSTF-122-A) Also includes some SPSB rejections of APOG proposed editorial changes.	A2 A3 A4 P4
7	50	APOG proposed technical improvement to Bases for LCO 3.0.3 is generic; how to include it in operating reactor STS NUREGs	T4
8	124, 127	Writer's guide convention for use of "plus or minus" instead of "±" is not clear.	A2 A4
9	128	Writers Guide 2.1.3.b.1, on primary level ordered list enumeration not followed in "ASA, LCO, and Applicability" section of the Bases for STS Subsection 3.3.1; use of digits in parenthesis is contrary to WG. However, the WG does not directly discuss ordered list enumeration convention for the "ASA, LCO, and Applicability" section of the Bases for Section 3.3.	A2 A4 P4

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A3 Editorial clarification or correction
A4 Presentation preference
A5 Improve consistency with WOG STS, Rev 4

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T6 TSTF Disposition

AP1000 STS Policy Types:
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Topic No.	Comment No(s).	Topic Summary	Topic Types
10	129	WG convention on use of symbols < > = ≥ ≤ in Bases, in place of text	A4 A5
11	119 (including Insert 1), 130, 134, 135, 144, 172, 178, 269, 310, 319, 476	I&C terminology. Make STS Section 3.3 instrument and instrument names of functions, components, and equipment more consistent within AP1000 STS, and with RCOL FSAR Chapter 7, PTS, and PTS Bases, design documents, and plant procedures; Also see Topic No. 13, item 4. • Source Range Neutron Flux, source range neutron flux (Function, channel, monitor, detector, High) • Intermediate Range Neutron Flux, intermediate range neutron flux (Function, channel, detector, High) • Power Range Neutron Flux, power range neutron flux (Function, High Setpoint, Low Setpoint, channel, detector) • excore nuclear instrument channel • nuclear instrumentation system (NIS) • instrument channel • Low, Low 1, Low 2, Low 3, Low 6 • High, High 1, High 2, High 3 • trip Setpoint, Trip Setpoint, setpoint, Setpoint • PMS; protection and safety monitoring system, and Protection and Safety Monitoring System • Protection Logic Cabinets - How are PMS cabinets, integrated protection cabinets (IPCs), and Protection Logic Cabinets related? Is "PMS Logic Cabinet" more accurate than "Protection Logic Cabinet"? • PMS division • Division, division • Use of "interlock" as synonym for "setpoint" • Providing reference to RTS or ESFAS table and Function number, or RTS or ESFAS LCO number in parenthesis following first mention of Function by its title in a Specification's Bases. • Integrated Protection Cabinets, integrated protection cabinets, IPCs	A3 A4
12	136	Since STS SR 3.3.1.9, Channel Calibration, is specified for STS Table 3.3.1-1 Function 12, PRHR Actuation reactor trip function (one or both PRHR HX discharge valves not fully closed), the Bases for this SR ought to explicitly discuss what a "calibration" of the PRHR HX discharge valve position indicators (four per valve) entails. Request APOG to provide such a description or explain how the definition of Channel Calibration captures it. In addition, why is SR 3.3.1.5 only specified for Overtemperature ΔT reactor trip Function?	T1

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Topic No.	Comment No(s).	Topic Summary	Topic Types
13	172	Disagreement about appropriate content of discussion of ESFAS interlocks in STS Specification 3.3.8 Bases. In GTST for STS 3.3.8, in the "ASA, LCO, and Applicability" section of Bases for Subsection 3.3.8, the Applicability discussions for the ESFAS interlocks provide information that clarifies the role of these functions in supporting their dependent ESFAS Functions: ○ P-4 (GTST Section XI page 60 and Section XII page 133) ○ P-6 (GTST Section XI page 61 and Section XII page 134) ○ P-11 (GTST Section XI page 62 and Section XII page 135) ○ P-12 (GTST Section XI page 62 and Section XII page 135) ○ P-19 (GTST Section XI page 63 and Section XII page 136) • Providing nominal value for an interlock setpoint in parenthesis following the interlock's initial mention in a Specification's Bases. • Providing reference to RTS or ESFAS table and Function number, or RTS or ESFAS LCO number in parenthesis following first mention of function by its title. • Other issues: 1. Regarding P-19 state. AP1000 Functional Diagram APP-PMS-J1-106 shows that the output of the RCS Hot Leg Pressure channel is logically reversed, so that if RCS wide range pressure is above the P-19 setpoint, the detector output is TRUE; but this is made FALSE by a NOT gate. What is the correct way to describe the state of P-19 above its setpoint ? Enabled or disabled? As depicted on APP PMS J1-111, this same question applies to P-11. 2. Why is interlock P-9 (RCS Average Temperature) not described in Bases, despite its support function, when in the disabled state above its ~200°F setpoint, to automatically unblock (on a divisional basis) many ESFAS Functions and also automatically unblock the Reactor Trip on Steam Generator Narrow Range Level – Low 2? continued	T4

Topic No.	Comment No(s).	Topic Summary	Topic Types
13	*172* *405* *425* *438*	Continued from previous page 3. Suggest that the Reactor Trip, P-4 interlock discussion in the "ASA, LCO, and Applicability" section of Bases for Subsection 3.3.8 include a statement to make clear *which of the four ESFAS Actuation Divisions* are used in the actuation logic for the turbine trip on a reactor trip (P-4) actuation signal. **Alternatively**, such information can be provided in the Turbine Trip discussion for each of the three turbine trip actuation signals: • Reactor Trip (P-4) (LCO 3.3.12) • Feedwater Isolation – Manual Initiation (Table 3.3.9-1, Function 5) • SG Narrow Range Water Level – High 2 (Table 3.3.8-1, Function 23) Adding such information in the discussion of each ESF Actuation Function would be beneficial for understanding which ESF components would be disabled by an inoperable or bypassed ESFAS Actuation Division. 4. The VEGP 3&4 TS Section 3.3 titles for various instrumentation functions do not match the titles provided by plant design drawings and functional diagrams. For examples, see list below. Does SNC plan to make titles of TS-required instrument functions consistent with FSAR, plant procedures, and design documents? Tech Spec title ... Design title CMT Level – Low 1 ... CMT Level – Low **3** CMT Level – Low 2 ... CMT Level – Low **6** Hot Leg Level – Low 1 ... Hot Leg Level – Low **2** Hot Leg Level – Low 2 ... Hot Leg Level – Low **4** SG NR Water Level – High 2 ... SG NR Water Level – High **3** SG NR Water Level – Low ... SG NR Water Level – Low **2** SG WR Water Level – Low ... SG WR Water Level – Low **2** Startup Feedwater Flow – Low ... Startup Feedwater Flow – Low **2** Cold Leg Temperature – Low ... Cold Leg Temperature – Low **2** Steam Line Pressure – Low ... Steam Line Pressure – Low **2** Pressurizer Pressure – High ... Pressurizer Pressure – High **2** Pressurizer Pressure – Low ... Pressurizer Pressure – Low **2** Reactor Coolant Flow – Low ... Reactor Coolant Flow – Low **2** RCP Bearing Water Temp – High ... RCP Bearing Water Temp – High **2** RCP Speed – Low ... RCP Speed – Low **2** continued	*T4*

Topic No.	Comment No(s).	Topic Summary	Topic Types
13	*172* *178* *193* *202* *207*	Continued from previous page 5. Regarding the Channel Operational Test (COT) Bases discussion of the role of interlocks, suggest adding the following sentence (shown as a markup of the second sentence) after the **fourth** sentence: This portion of the COT **also** ensures the associated Function is not **enabled** ~~bypassed~~ when required to be **blocked** ~~enabled~~ **by verifying the capability to manually bypass the Function as permitted by the interlock**. The proposed sentence is complementary to the second sentence and clarifies that the COT verifies both the enabling and blocking roles of the interlocks. 6. See comments **178, 193, 202, and 207**: a. The Bases for STS SR 3.3.12.1, TADOT of P-4, is unclear. In particular, why are the [integrated protection cabinets] IPCs mentioned? Since P-4 supports several ESFAS functions by enabling them, as well as initiating other ESFAS functions – for those enabled functions, should not a COT include verification of the proper functioning of P-4? b. Last sentence of last paragraph of STS Bases for SR 3.3.15.1 and SR 3.3.16.1 ends with phrase “which will report a failure within these cabinets to the operator”; what are “these cabinets” referring to?	*T4*
14	239, 253	Deleting paragraph from “LCO” section of Bases for Specification 3.4.4 versus moving paragraph to “Applicability” section of Bases for Specification 3.4.4. This paragraph, with GTS markup shown, is: With the ~~RTBs in the open position, the PLS is not capable of rod withdrawal; therefore~~ **PLS not capable of rod withdrawal and all rods fully inserted** only a minimum RCS flow of 3,000 gpm is necessary to ensure removal of decay heat from the core in accordance with LCO 3.4.8, Minimum RCS Flow. Even though this statement does not directly relate to meeting LCO 3.4.4, it is appropriate to point out the RCS flow requirements when LCO 3.4.4 does not apply. To be consistent with Bases for Subsection 3.4.5, “RCS Loops – MODE 3” of NUREG-1431, Rev. 4, the appropriate location of this paragraph is in the “Applicability” section of the Bases for AP1000 STS 3.4.4.	A5

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Topic No.	Comment No(s).	Topic Summary	Topic Types
15	242	Adding paragraph to "Background" section of Bases for AP1000 STS Specification 3.4.7, "RCS Operational LEAKAGE ," for consistency with Bases for NUREG-1431 Specification 3.4.14, "RCS Pressure Isolation Valve (PIV) Leakage," - versus - Adding the paragraph to "Applicability" section of Bases for AP1000 STS Specification 3.4.7 because NUREG-1431 Specification 3.4.13, "RCS Operational LEAKAGE," includes this paragraph in the "Applicability" section of Bases, not in the "Background" section.	A5
16	245, 258, 260	Description of "steady state" operation in Bases for SR 3.4.7.1: Suggest additional changes relating to description of "steady state operation" for both • RCS operational LEAKAGE determination by inventory balance, and • RCS primary to secondary LEAKAGE determination . . . steady-state is defined as stable ~~reactor coolant system~~ **RCS** pressure, **average** temperature, **and makeup and letdown flows, reactor** power level, pressurizer level, and reactor coolant drain tank and in-containment refueling water storage tank levels. *Since AP1000 controls pressurizer level in a band, letdown and makeup flow is infrequent compared to a 4-loop Westinghouse PWR; so those flows may not be needed in the description:* . . . steady-state is defined as stable ~~reactor coolant system~~ **RCS** pressure **and average** temperature, **reactor** power level, pressurizer level, and reactor coolant drain tank and in-containment refueling water storage tank levels; **steady-state also means no makeup flow and no letdown flow**.	T1 T4
17	252	Add paragraph to state why LCO 3.4.8 requires one RCP to be in operation, in third paragraph of the "Background" section of the Bases for Specification 3.4.8, Minimum RCS Flow. **The purpose of this LCO is to ensure at least one RCP is in operation with a total flow through the core of at least 3,000 gpm, which is the minimum flow necessary to ensure adequate mixing of primary system coolant with makeup coolant inadvertently injected at boron concentrations less than required to maintain the specified SDM.**	T4
18	271	In GTST for Subsection 3.4.12, Section XI on page 18 and Section XII on page 25, in the "References" section of the Bases, should Reference 1, "AP1000 Probabilistic Risk Assessment, Appendix A" be modified to reflect plant-specific version?	A3
19	343, 344, 345	Use of "isolation valve" and "isolation device" in Specification 3.6.3 and Bases.	A3 A5

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Topic No.	Comment No(s).	Topic Summary	Topic Types
20	328, 370, 333, 377,	In Specification 3.6.6, and 3.6.7 Bases: • Use of “alternate” versus “alternative” cooling capabilities • Use of RCS “level” versus RCS “inventory” • Use of “reactivity control assemblies” versus “control rods” (Note that this occurs in other LCOs.) • Use of “condition” versus “case”	A2 A3
21	378	In GTST for GTS Subsection 3.6.9 (STS Subsection 3.6.8), Section XI on page 17 and Section XII on page 23, in the “SRs” section of Bases, under heading “SR 3.6.9.2”, **do not delete last sentence**; “This” does not refer to agitation but to “rapid mixing” in the [containment] sump during post LOCA conditions. SRP 6.5.2, page 6.5.2-5, Section II. ACCEPTANCE CRITERIA, SRP Acceptance Criteria, paragraph 1.G. Design Requirements for Fission Product Removal “Long-term iodine retention may be assumed only when the equilibrium sump solution pH, after mixing and dilution with the primary coolant and ECCS injection, is above 7. This pH value should be achieved by the onset of the spray recirculation mode.” Proposed edit of sentence: **Good mixing with the sump water is expected due to both basket construction and because the baskets are placed in locations conducive to recirculation flows post-accident.** This **rapid mixing** would ensure ~~compliance with~~ **satisfying** the Standard Review Plan ~~requirement~~ **acceptance criterion** of **achieving** a pH ≥ 7.0 **in the containment sump water inventory** by the onset of recirculation after a LOCA. Consider adding NUREG-0800 Section 6.5.2 as a reference.	T4
22	422, 423	Request that APOG supply updated Bases figures in Word format. (Figures B 3.7.6-1, B 3.7.6-2)	A2
23	425, 438	Use of LOF for loss of feedwater, FLB for feedwater line break (Feedwater Line Break), and SLB for steam line break (Steam Line Break); do not use “Feedline Break”	A4 A5 T4

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Topic No.	Comment No(s).	Topic Summary	Topic Types
24	438	Concerning accuracy and clarity of Bases for Subsection 3.7.10: Based on the FSAR Tier 1 containment isolation valve list, and drawings APP-PMS-J1-108, -109, -111, -113, -115 In the following ">>" means "initiate(s)" • SG PORV block valves are CIVs, but are **not** designed to close on a "T" signal (PMS isolation signal on a containment isolation actuation signal) Steamline Pressure – Low **2** (respective SG) .....on 109 >> Close PORV and Block Valve (respective SG) ..... on 109 • The first blowdown isolation valve outside of containment for each SG is also a containment isolation valve. These CIVs (SGS PL V074A & B) appear to be designed to close on a "T" signal (PMS isolation signal on a containment isolation actuation signal), in addition to a PRHR actuation signal, and SG NR Level – Low 2. RCS Wide Range Pressure – Low .....on 115 AND CMT Level – Low **6** (in either CMT) .....on 115 AND ADS Stage 3 actuation signal ..... on 115 to 113 >> ADS Stage 4 automatic actuation OR ..... from 115 *Unlatched Safeguards Signal ..... from 111* >> Containment Isolation Actuation ..... on 113 to 108 >> Close SG 1&2 Blowdown Isolation Valves .... from 113 on 108 OR PRHR Actuation .....on 108 >> Close SG 1&2 Blowdown Isolation Valves ..... on 108 OR SG Narrow Range Water Level – Low 2 (respective SG) .....on 108 >> Close SG Blowdown Isolation Valves (respective SG).. on 108 • Why does Tier 1 containment isolation valve list table only list "PRHR" actuation for automatic closure of SG blowdown isolation valves, but does not list (2 out of 4) SG narrow range water level channels indicating below the SG Narrow Range Water Level – Low **2** setpoint (Table 3.3.8-1 Function 20) in the associated SG?	A4 A5 T4

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Topic No.	Comment No(s).	Topic Summary	Topic Types
25	438 457, 464, 465, 466, 467, 471, **474**	In Specifications 3.8.3 and 3.8.4, • Consistent use of ○ "bus" ○ "electric power distribution subsystem" ○ "electric power distribution system" ○ "Class 1E AC instrument and control bus" ○ "Class 1E AC instrument and control distribution panel" ○ "electric power distribution system division" ○ "electric power distribution subsystem division" ○ "Class 1E DC bus" ○ "Class 1E DC electric power distribution system bus" ○ "Class 1E DC electric power distribution subsystem bus" • Proposed edit of Bases for Required Actions B.1 and B.2 of Specification 3.8.3 • Standard language in Bases for Required Actions to "Be in MODE 3 [within] 6 hours AND Be in MODE 5 [within] 36 hours": SPSB proposes to globally remove "at least" from "at least MODE 3." • Use of "reactor pressure boundary" versus "reactor **coolant system** pressure boundary" in "ASA" section of Bases for Specification 3.8.4 • Should LCO 3.8.3 Note 1 use "bus" or "distribution panel" after "associated Class 1E AC instrument and control"; should LCO 3.8.3 Note 2 use "buses" or "distribution panels" after "associated Class 1E AC instrument and control"?	A3 A4
26	467	Discuss whether the following suggested clarification is accurate (In GTST for Subsection 3.8.5, Section XI on page 21 and Section XII on page 36, in "LCO" section of Bases, third paragraph, (split third paragraph) as indicated: OPERABLE Class 1E DC electric power distribution subsystems require the associated buses, **distribution panels,** motor control centers, and electrical circuits to be energized to their proper voltage from either the associated battery bank or **battery** charger. **Either the** ~~The~~ spare battery bank, ~~and/or~~ **the spare battery** charger,~~s~~ **or both** may be used by one **DC power distribution** subsystem for OPERABILITY. OPERABLE Class 1E AC **instrument and control** electrical power distribution subsystems require the associated buses to be energized to their proper voltages and frequencies from the associated inverter or regulating transformer.	A2 T4
27	465, 467, **474**	• Use of "distribution panels" instead of "buses" in Bases for Specification 3.8.5 and Table B 3.8.5-1 • Proposed clarification of Bases for Specification 3.8.5	A2 A3 A4 A5
28	506	Whether to retain the brackets of GTS bracketed information (COL items) in the AP1000 STS (only affects STS Chapter 5)	P3 P5

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29	534	Suggest modifying CHANNEL CHECK Bases for SR 3.3.1.1, SR 3.3.2.1, and SR 3.3.3.1 to incorporate BWOG Inserts 1, 2, and 3, as appropriate, of TSTF-264-A, that CHANNEL CHECK agreement criteria includes an expectation of one decade of indication overlap when transitioning between neutron flux instrumentation (power range neutron flux, intermediate range neutron flux, and source range neutron flux).	T4 T6