

भारत सरकार केंद्रीय विद्युत प्राधिकरण दक्षिण क्षेत्रीय विद्युत समिति 29, रेसकोर्स क्रॉस रोड बेंगलूर- 560 009		 सत्यमेव जयते	Government of India Central Electricity Authority Southern Regional Power Committee 29, Race Course Cross Road Bengaluru-560 009	
Email: mssrpc-ka@nic.in		Web site: www.srpc.gov.in		Phone:080-22282516
सं/No.	SRPC/SE(O)/16th PSS/2026/4219-69	दिनांक/ Date		09.09.2026

To

As per enclosed list

Sir,

Subject: Record Notes of 16th Meeting on PSS Tuning of Generators - reg.

Enclosed, please find the Record Notes of the 16th Meeting on PSS Tuning of Generators held on 13.07.2026 through Video Conferencing (VC).

It is requested that PSS tuning / retuning of the due units may kindly be carried out at the earliest, and the corresponding report submitted to SRPC and SRLDC-Grid India.

धन्यवाद /Thanking you,

भवदीय /Yours faithfully

malini 09/09/2026

(मालिनी एन एस / Malini N S)

अधीक्षक अभियंता / Superintending Engineer(O, P & C)

Mailing list for the Meeting in respect of PSS tuning

1. Chief Engineer (GO), APTRANSCO, Vijayawada
2. Chief Engineer (Generation), APGENCO, Vijayawada
3. Chief General Manager (OCS, Civil, EA & CGRF works), APEPDCL, Visakhapatnam
4. Chief Engineer (E), SLDC, KPTCL, Bengaluru
5. Chief Engineer (ED), KPCL, Bengaluru
6. Joint Director (Projects), PCKL, Bengaluru (jdppckl2018@gmail.com)
7. Chief Engineer (TSO), KSEBL, Kalamaserry
8. Chief Engineer (Opn.), TANTRANSCO, Chennai
9. Chief Engineer (Mech), TNPGCL, Chennai
10. Chief Engineer (NCES), TNGECL, Chennai (cences@tnebnet.org)
11. CFC, TNPDC, Chennai
12. Chief Engineer (GO), TGTRANSCO, Hyderabad
13. Chief Engineer (Generation), TGGENCO, Hyderabad
14. Director (Operation, P&MM, IPC&RAC and Energy Audit), TGSPDCL, Hyderabad
15. Superintending Engineer - I, Electricity Department, Puducherry
16. General Manager (O&M), SRTS-I, PGCIL, Secunderabad.
17. General Manager (O&M), SRTS- II, PGCIL, Bengaluru.
18. General Manager (OS), SRHQ, NTPC, Secunderabad
19. AGM (EEMG), RSTPS, NTPC, Ramagundam
20. AGM(EEMG), Talcher STPS Stg - II, NTPC, Talcher
21. AGM (EEMG), Simhadri STPS, NTPC, Simhadri
22. AGM (EEMG), Kudgi STPS, NTPC, Kudgi.
23. General Manager, Telangana STPS, NTPC
24. General Manager(O&M), NTECL, Vallur
25. Chief General Manager, Neyveli TPS-II, Neyveli
26. General Manager, NNTPS, Neyveli
27. General Manager, TPS-I Expansion, Neyveli
28. General Manager, TPS-II Expansion, Neyveli
29. Chief General Manager (Ele), NLC Tamil Nadu Power Limited (NTPL), Tuticorin
30. Operation Superintendent, MAPS, Kalpakkam
31. STE (E&I), Kaiga G.S. Stage - I, Kaiga
32. STE (E&I), Kaiga G.S. Stage - II, Kaiga
33. Operation Superintendent, KKNPP, Kudankulam
34. AGM, JSWEL Vijayanagar Plant, Torangallu, Bellary
35. Associate Vice President (P&M), APL, Udupi
36. Head (O), SEIL Phase-I, Hyderabad
37. Head (O), SEIL Phase-II, Hyderabad
38. Plant Head, IL& FS Tamil Nadu Power Company Limited, Cuddalore
39. Sr.Vice President (O&M), HNPCL, Hyderabad
40. Sr. Deputy General Manager, CTUIL, Gurugram (anilsehra@powergrid.in)
41. Executive Director (Commercial), NPCIL, Mumbai (nrchoudhary@npcil.co.in)
42. Dy. General Manager, KNTL, IndiGrid Ltd, Noida (abhishek.kukreja@indigrid.com)
43. M/s Adani Enterprises Limited
44. Joint Sr. Vice President, Greenko Group, Hyderabad (venkateswarlu.a@greenkogroup.com)
45. General Manager, Renew Power Private Limited, Gurugram (yogesh.rao@renew.com,
manjunatha.h@renew.com, basappa.d@renew.com)
46. Lead, OMS, Engineering, Suzlon Energy Limited, Pune (Rajendra.deshapande@suzlon.com)
47. Executive Vice President, PTC India Limited, New Delhi (hlchoudhary@ptcindia.com)
48. Director, GM Division, CEA, New Delhi
49. Director, NPC Division, CEA, New Delhi
50. Executive Director, NLDC, Grid-India, New Delhi
51. Executive Director, SRLDC, Grid-India, Bengaluru

Southern Regional Power Committee (SRPC)

Record Notes of the 16th Meeting of PSS Tuning of Generators held on 13th July 2026 through VC

1. Introduction

- 1.1. The 16th Meeting on PSS Tuning of Generating units was held on 13th July 2026 through Video Conferencing (VC). The list of participants is at **Appendix**.
- 1.2. Smt Malini N S, SE(O), SRPC, welcomed all the participants to the meeting on Power System Stabilizer (PSS) tuning and testing. She stated that the Indian power sector is undergoing an unprecedented transformation, with the installed generation capacity exceeding 540 GW and renewable energy contributing an increasingly larger share of the generation mix.

She observed that while this transition represents a significant achievement towards a cleaner and more sustainable energy future, it has also introduced several operational challenges. The increasing penetration of inverter-based renewable energy sources (IBRs), coupled with declining system inertia and the growing presence of large bulk-power transformers at 400 kV and 765 kV transmission levels, has led to continuously evolving system operating conditions. Consequently, dynamic stability has emerged as one of the most critical aspects of secure and reliable grid operation.

She emphasized that power systems can become vulnerable to oscillations if they are not effectively damped. In this context, she noted that the installation of a PSS alone is not sufficient, and its effectiveness depends on proper parameter tuning, comprehensive field validation, availability of accurate generator and excitation system models, periodic review of settings, and proper coordination with the Automatic Voltage Regulator (AVR).

She further stated that the objective of the meeting was not only to review the present status of PSS implementation and testing across generating stations, but also to discuss challenges related to field implementation, availability of validated simulation models, benchmarking of studies, testing methodologies, regulatory compliance, and timelines for completion of the remaining tuning activities.

She expressed confidence that the deliberations would be fruitful and would facilitate the timely completion of PSS tuning and testing activities, thereby enhancing the dynamic security and reliability of the power system.

She extended a warm welcome to Shri T Srinivas, who has assumed charge as Executive Director, SRLDC from 01.07.2026.

- 1.3. Shri T Srinivas, ED SRLDC, welcomed all the participants to the 16th Meeting on Power System Stabilizer (PSS) Tuning of Southern Region generating stations. He emphasized the importance of PSS tuning of generators for ensuring grid stability and secure system operation.

He stated that PSS tuning should not be viewed merely as a regulatory requirement, but as an essential activity for maintaining the reliable and stable operation of generating units and the power system as a whole. He remarked that, just as periodic health check-ups are

necessary to ensure the well-being of individuals, periodic testing and tuning of PSS are necessary to ensure that generating units continue to perform as per their design requirements.

He observed that concerns had been expressed by SRLDC and SRPC regarding the submission of PSS tuning and testing results by some generating stations. In several cases, the results were not submitted in the prescribed format, making detailed analysis and assessment difficult. He requested all generating stations to ensure that the required information and test results are submitted in the prescribed format. He further stated that, if any difficulties are being faced in coordination with OEMs or vendors, the same may be discussed with SRLDC and SRPC so that suitable solutions can be explored.

He urged all generating stations to take up the PSS tuning activities planned for the current financial year in accordance with the targets and timelines communicated by SRPC. He emphasized that these activities should not be treated merely as compliance obligations, but as measures undertaken for the collective benefit of the power system and all stakeholders in the Southern Region.

He expressed confidence that all constituents would extend their support and cooperation in advancing the reliability and performance of the Southern Region grid. He further hoped that the deliberations during the meeting would be fruitful and would facilitate effective implementation of the remaining PSS tuning activities.

- 1.4. Shri Asit Singh, MS SRPC, stated that, as per the IEGC provisions, the periodicity for PSS retuning has been revised to once every five years. He emphasized that the extended timeline should not dilute the importance of compliance and expressed that all generating stations would complete the PSS tuning activities diligently within the stipulated period.

He informed the forum that reports pertaining to around 20 generating units had been received and would be reviewed during the meeting. He further recalled that during the 14th PSS Tuning Meeting, SRLDC had stated that Gain Margin test, Step Response test, Impulse test upto smaller magnitudes etc. can be done by all generators. However, many generating stations had not undertaken such tests. He stated that, wherever field tests cannot be conducted due to practical constraints, the studies should be carried out through simulation to the extent possible.

He further stated that, in cases where field testing or simulation studies cannot be completed, the tuning agency or OEM should provide detailed technical justification along with the reasons for the inability to carry out the required tests.

He further stated that there had been certain doubts regarding the testing requirements specified in the regulations. He clarified that there are two separate provisions - one pertaining to periodic testing, for which the procedure has been issued by Grid-India, and the other pertaining to PSS tuning, for which the procedure has been formulated by SRPC. He mentioned that both activities may be carried out simultaneously; however, separate reports should be submitted for the testing and tuning activities.

He further observed that changes in network configuration and operating conditions may necessitate revision of PSS parameters and gain settings. He highlighted that, with the increasing penetration of inverter-based resources and the growing share of electronically interfaced loads, the likelihood of power system oscillations has increased. Inter-unit, inter-

plant, and inter-area oscillations have already been observed in certain regions with high renewable energy penetration, as reflected in various technical studies and reports.

In view of these developments, he emphasized that PSS tuning and periodic testing, as mandated under the IEGC, have become increasingly important for maintaining system stability and reliability.

Before concluding, he placed on record his appreciation for the efforts of the SRPC Secretariat and SRLDC team involved in the analysis and review of PSS tuning reports. He acknowledged their sincere and sustained contributions over the years in supporting the implementation and monitoring of PSS tuning activities across the Southern Region.

He then handed over the proceedings for the subsequent agenda items.

1.5. SRPC made a brief presentation on the Tuning Procedure for the Power System Stabilizers (**Annexure-IV**) describing the following:

- ✓ Simulation Studies to be carried out before PSS Tuning
- ✓ PSS Typical Testing Procedure

1.6. The following had been noted:

- IEGC 2023 Regulations were implemented from 01st October 2023. In line with IEGC 2023 Regulations provisions, PSS Procedure was finalized.
 - The Regulation 29(7) of CERC (IEGC) Regulations 2023 stipulates that *‘The tuning of AVR, PSS, Voltage Controllers (PPC) including for low and high voltage ride through capability of wind and solar generators or any other requirement as per CEA Technical Standards for Connectivity shall be carried out by the respective generating station:*
 - *at least once every five (5) years;*
 - *based on operational feedback provided by the RLDC after analysis of a grid event or disturbance;*
 - *in case of major network changes or fault level changes near the generating station as reported by NLDC or RLDC(s), as the case may be.*
 - *in case of a major change in the excitation system of the generating station.’*
 - Regulation 29(8) of CERC (IEGC) Regulations 2023 stipulates that Power System Stabilizers (PSSs), AVRs of generating units and reactive power controllers shall be properly tuned by the generating station as per the plan and the procedure prepared by the concerned RPC. In case the tuning is not complied with as per the plan and procedure, the concerned RLDC shall issue notice to the defaulting generating station to complete the tuning within a specified time, failing which the concerned RLDC may approach the Commission under Section 29 of the Act.
- 1.7. SRPC/SRLDC observed with concern that several of these reports lacked complete information on the mandated parameters and did not fully adhere to the testing requirements specified in the “PSS Tuning Procedure for Southern Region,” which has been prepared in line with the provisions of the CERC (IEGC) Regulations,

2023. In addition to the existing procedure, additional tests were incorporated based on the recommendations of the Sub-Group constituted to finalize a common procedure for Power System Stabilizer (PSS) tuning. However, it was observed that most of the PSS test reports submitted included only the Step Response Test (SRT) details, with other mandated tests remaining unaddressed. Generating utilities are requested to ensure that PSS tuning is carried out comprehensively and effectively as per the finalized procedure. It was also noted with concern that, despite issuance of Record Notes by SRPC after each PSS tuning meeting, most utilities have not been submitting the Action Taken Reports (ATRs) on the observations and recommendations communicated therein.

- 1.8. Power System Stabilizer (PSS) tuning may be performed by Generator or Original Equipment Manufacturer (OEM) or qualified third-party agencies, provided the agency has:

- Access to the necessary dynamic simulation tools and test equipment;
- Familiarity with the specific excitation system and generator model in use.

It was added that while PSS tuning may be carried out through qualified third-party agencies, it is advisable to involve the OEM in the process to ensure that any proprietary control logic, configuration settings, and OEM-specific tuning parameters are properly addressed and incorporated. It was mentioned that necessary care should be taken by generators to ensure that when PSS tuning is carried out, there should not be any unit tripping. It was emphasized that the test should be discontinued if a significant deviation is observed between the simulated response and the actual measured response, as such discrepancies may indicate incorrect modeling or tuning issues that require rectification before proceeding further (Point No. VII in the PSS tuning procedure).

- 1.9. MS SRPC stated that during the initial discussions with the OEM regarding PSS tuning, all required tests both simulation-based and actual field tests should be thoroughly reviewed and planned. In case any specific test is not feasible or cannot be conducted, the OEM must provide a clear justification for its exclusion, duly documented and communicated to the concerned utility. It was also emphasized that the required content and format of the PSS test report must be clearly explained to the OEM to ensure completeness and consistency with the approved PSS tuning procedure.
- 1.10. SRLDC explained the PSS tuning guidelines, Generator datasheet, Excitation system, PSS model, Governor model also opined that all the simulation studies and tests mentioned in the PSS tuning procedure of SR to be carried out by the generators.

2. Status of PSS Tuning of generating units (Summary):

	Utility	PSS tuning carried out in units (at least once)	PSS Tuning not carried out or information not furnished to SRPC (as on 13.07.2026)	
1	APGENCO+ IPPs	27	3	LSR Unit – 3&4; VTPS (Dr. NTPS Unit 8)
2	KPCL+IPPs	39	1	Yermarus TPS Unit – 1
3	KSEBL	4	2	Idukki Units – 4 & 5
4	TANGEDCO + IPPs	21	1	NCTPS Stage III Unit 1
5	TGGENCO+IPPs	26	5	Yadadri TPS Units 1 to 5
6	CGS	46	3	NTPC Kayamkulam (2 GT + 1 ST)
7	ISTS connected IPPs	12	7	Lanco Stage - II; MEL Unit – 1 to 4
Total		175	22	

Deliberations:

- Updated in the table at Annexure-I.

3. Plan for PSS Tuning for the Year 2026-27 (Five-Year cycle basis)

a. Central Generating Stations (2026-27):

Station	Unit	Capacity (MW)	Previous Date of Tuning	PSS Tuning Due Date
NTPC Simhadri STPS St- I	1	500	04.12.2019	Immediate
	2	500	04.12.2019	Immediate
Talcher STPS Stage-II	3	500	July 2022	Immediate
	4	500	July 2022	Immediate
	6	500	July 2022	Immediate
Kudgi STPS Stage-1	1	800	25.02.2022	25.02.2027
	2	800	19.02.2022	19.02.2027
	3	800	20/21.02.2022	20/21.02.2027
NTPC Kayamkulam	1,2,3	2 x 116.6 + 126.38 (359.58)	-	Immediate
NLCIL-TPS II Stage - II	4	210	17.06.2021	Immediate
NLCIL- TPS I Exp.	1	210	12.10.2015	Immediate
	2	210	05.11.2015	Immediate
NLCIL- TPS II Exp.	1	250	19.04.2017	Immediate
	2	250	19.04.2017	Immediate
NNTPS	1	500	03.12.2021	03.12.2026

	2	500	21.09.2021	21.09.2026
NPCIL-MAPS	1	220	11.01.2006	Immediate
	2	220	20.11.2018	Immediate
Total Number of Units Pending PSS Tuning				20

b. ISTS connected IPPs (2026-27):

Station	Unit	Capacity (MW)	Previous Date of Tuning	PSS Tuning Due Date
MPGL (Formerly Coastal Energen)	1	600	17.07.2018	Immediate
MEL	1 to 4	2 x 150+ 2 x 350	-	Immediate
Lanco Stage II	1,2	1x233+ 1x133	-	Immediate

c. State Generating Stations (2026-27):

Station	Unit	Capacity (MW)	Previous Date of Tuning	PSS Tuning Due Date
APGENCO - Dr. NTTPS (VTPS)	8	800	-	Immediate
APGENCO-SDSTPP (Krishnapatnam JV)	1	800	12.04.2018	Immediate
	2	800	13.04.2018	Immediate
APGENCO - Srisaillam RB HEP	1	110	06.10.2020	Immediate
	2	110	06.10.2020	Immediate
	3	110	06.10.2020	Immediate
	4	110	06.10.2020	Immediate
	5	110	06.10.2020	Immediate
	6	110	06.10.2020	Immediate
	7	110	06.10.2020	Immediate
APGENCO-Lower Sileru HEP	1	115	13.12.2016	Immediate
	2	115	14.08.2021	14.08.2026
	3	115	-	Immediate
	4	115	-	Immediate
HNPCCL – IPP(AP)	1	520	28.03.2017	Immediate
	2	520	27.03.2017	Immediate
KPCL- Bellary TPS	1	500	23.11.2020	Immediate
	2	500	24.11.2020	Immediate
	3	700	02.04.2021	Immediate
KPCL- Raichur TPS	1	210	08.01.2022	08.01.2027
	2	210	22.12.2021	22.12.2026
	1	800	-	Immediate

KPCL-Yermarus TPS				
KPCL-Nagjheri HEP	1	150	4/5.01.2017	Immediate
	2	150	4/5.01.2017	Immediate
	4	150	4/5.01.2017	Immediate
	5	150	4/5.01.2017	Immediate
	6	135	17.08.2017	Immediate
Sharavathy HEP	1	103.5	05.04.2021	Immediate
	2	103.5	03.04.2021	Immediate
	4	103.5	05.04.2021	Immediate
	5	103.5	07.04.2021	Immediate
	6	103.5	25.09.2021	25.09.2026
APL-Udupi	1	600	18.02.2021	Immediate
	2	600	18.02.2021	Immediate
KSEBL- Idukki HEP	1	130	15.12.2021	15.12.2026
	2	130	15.12.2021	15.12.2026
	3	130	15.12.2021	15.12.2026
	4	130	-	Immediate
	5	130	-	Immediate
TNPGCL- NCTPS Stage - I	1	210	12.07.2021	12.07.2026
	2	210	29.01.2021	Immediate
	3	210	29.01.2021	Immediate
TNPGCL- Tuticorin TPS	1	210	06.10.2021	06.10.2026
	5	210	15.03.2021	Immediate
TNPGCL – NCTPS Stage III	1	600	-	Immediate
Mettur TPS Stage-I	2	210	08.04.2021	Immediate
TNGECL- Kadamparai HEP	1	100	22.08.2017	Immediate
	2	100	22.08.2017	Immediate
	3	100	22.08.2017	Immediate
	4	100	22.08.2017	Immediate
TGGENCO - Yadadri TPS	1	800	-	Immediate
	2	800	-	Immediate
	3	800	-	Immediate
	4	800	-	Immediate
	5	800	-	Immediate
TGGENCO – Bhadradi TPS	1	270	28.03.2022	28.03.2027
	2	270	28.03.2022	28.03.2027

	3	270	29.03.2022	29.03.2027
	4	270	29.03.2022	29.03.2027
TGGENCO-NagarjunaSagar HEP	1	100.8	04.03.2017	Immediate
	2	100.8	14.08.2021	14.08.2026
	3	100.8	14.08.2021	14.08.2026
	4	100.8	14.08.2021	14.08.2026
	5	100.8	14.08.2021	14.08.2026
	6	100.8	14.08.2021	14.08.2026
	7	100.8	14.08.2021	14.08.2026
	8	110	14.08.2021	14.08.2026
TGGENCO – Srisailam LB HEP	4	150	19.01.2017	Immediate

Deliberations:

➤ Updated in the table at Annexure-I.

4. The observation/comment of PSS tuning/ SRT is at Annexure-I
5. The analysis and remarks on PSS tuning / SRT reports received for 16th meeting of PSS is at **Annexure - II**.
6. The Status of PSS Tuning/SRT of generating Units in SR (as on 13.07.2026) is at **Annexure- III**.
7. SRPC mentioned that generating stations may carry out a self-assessment of the report covering all simulation studies, test results, data, and calculations. Based on this assessment, the final comprehensive PSS tuning report may be furnished to SRPC and SRLDC for review and record.
8. SE(O), SRPC noted the following:
 - ✓ It was observed from the deliberations that the overall PSS tuning performance has improved compared to the previous review.
 - ✓ Generating units whose PSS tuning is due as per the five-year cycle stipulated under the IEGC 2023 may expedite the completion of the required tests and tuning activities in compliance with the regulations.
 - ✓ In cases where any simulation studies or field tests specified in the approved PSS Tuning Procedure have not been carried out by the generator or OEM, detailed technical justifications for such deviations shall be furnished by the generator/OEM in the final PSS Tuning Report submitted to SRPC and SRLDC.
 - ✓ The generators were also requested to review and comply with the recommendations communicated in the Minutes of the 15th and 16th PSS Tuning Meetings and the action taken report may be furnished to SRPC/SRLDC.

Vote of Thanks

MS SRPC thanked all the representatives from SRLDC, SLDCs, and generating stations for their active participation in the 16th PSS Tuning Meeting. The valuable inputs and continued support from the stakeholders were appreciated. He looked forward to continued cooperation in the timely implementation of recommendations and furnishing of reports.

a) APGENCO:

Station	Status of PSS tuning				Observations / Comments
	Unit	MW	Previous Date of Tuning	Due date	
Rayalaseema TPS	1	210	04-05-22	04-05-27	12th PSS (26-05-2023): Matter was taken up with OEM. Response is awaited. 11th PSS (17-11-2022): Effectiveness of PSS is not present as per the plots for units 1 and 2. PSS tuning/SRT may be taken up after the DAVR installation. Fine tuning of values using simulation is suggested before going for actual testing.
	2	210	04-05-22	04-05-27	
	3	210	30-04-22	30-04-27	15th PSS (23-05-2025):
	4	210	04-05-22	04-05-27	Rayalaseema TPS Unit 5 representative mentioned that OEM mentioned that issue will be addressed in next PSS tuning.
	5	210	30-04-22	30-04-27	12th PSS (26-05-2023): Matter was taken up with OEM. Response is awaited. 11th PSS (17-11-2022): Effectiveness of PSS is not present as per the plots for units 3, 4 and 5. PSS tuning/SRT may be taken up after the DAVR installation. Fine tuning of values/constants using simulation is suggested before going for actual testing.
	6	600	02-05-22	02-05-27	15th PSS (23-05-2023): Rayalaseema TPS Unit 6 representative mentioned that matter was taken up with OEM and it was replied by OEM that earlier furnished data is only available. SRPC replied that generator may finalise the report received from OEM only if all the plots/analysis/data is found satisfactory.

					Rayalaseema TPS Unit 6 representative mentioned that OEM expressed that some of the new tests as per the PSS Procedure are not possible to carry out. SRPC replied that OEM can furnish technical reasons for the tests which are mentioned in the PSS procedure which are not able to carry out. 12th PSS (26-05-2023): Matter was taken up with OEM. Response is awaited. 11th PSS (17-11-2022): From ΔD calculation damping is shown but from the plots inference cannot be made. The plots may be resubmitted with appropriate scale for analysis.
Vijayawada TPS (Dr. NTPS)	1	210	20/22-02-23	20/22-02-28	12th PSS (26-05-2023): Damping is satisfactory only at lower step. Generator data, PSSE model data for Excitation and PSS Parameters
	2	210	20/22-02-23	20/22-02-28	12th PSS (26-05-2023): Damping is satisfactory only at lower step. Generator data, PSSE model data for Excitation and PSS Parameters
	3	210	20/22-02-23	20/22-02-28	15th PSS (23-05-2025): The representative from Dr. NTPS informed that the matter was taken up with the OEM, and the OEM has responded that the previously provided response is the maximum possible. 12th PSS (26-05-2023): Damping is not satisfactory from the submitted plots. Generator data, PSSE model data for Excitation and PSS Parameters Revised plots to be furnished with the recorded data for analysis.
	4	210	20/22-02-23	20/22-02-28	12th PSS (26-05-2023): Damping is not satisfactory from the submitted plots. Generator data, PSSE model data for Excitation and PSS Parameters Revised plots to be furnished with the recorded data for analysis.
	5	210	21-02-23	21-02-28	12th PSS (26-05-2023): Damping is not satisfactory from the submitted plots. Generator data, PSSE model data for

					Excitation and PSS Parameters Revised plots to be furnished with the recorded data for analysis.
	6	210	20-02-23	20-02-28	12th PSS (26-05-2023): Damping is not satisfactory from the submitted plots. Generator data, PSSE model data for Excitation and PSS Parameters Revised plots to be furnished with the recorded data for analysis.
	7	500	21-02-23	21-02-28	12th PSS (26-05-2023): Damping is not satisfactory from the submitted plots. Generator data, PSSE model data for Excitation and PSS Parameters Revised plots to be furnished with the recorded data for analysis.
	8	800			16th PSS (13-07-2026): Dr NTPPS(VTPS) representative stated that PSS tuning for the Unit 8 was carried out during Feb 26. The report would be furnished. 15th PSS (23-05-2025): Dr NTPPS representative informed that rotor vibration issues are being addressed. PSS tuning is planned by December 2025. 14th PSS: APGENCO informed that due to rotor vibration issue, the PSS tuning for the unit was not carried out till date. Matter is pursued with OEM (BHEL). Issues may be rectified in 3 months. Later PSS tuning would be taken up.
SDSTPP (Krishnapatnam JV)	1	800	12-04-18	12-04-23	16th PSS (13-07-2026): SDSTPS representative stated that PSS tuning for Units 1 and 2 is planned to be carried out by September 26 end.
	2	800	13-04-18	13-04-23	15th PSS (23-05-2025): SDSTPP representative informed that, with respect to Unit-1, they are currently unable to raise the load beyond 60% due to one pass of the ESP being unavailable. Rectification works are in progress. Subsequently, PSS tuning will be taken up for units 1 and 2 by October 2025. 14th PSS: APGENCO replied through mail that for SDSTPS Units 1 and 2, Purchase Order Placed on M/s. L&T MHI Power Generators

					Pvt. Ltd. on 13.06.2024 and will be carried out by October 2024. 12th PSS (26-05-2023): SDSTPP mentioned that Retuning of units 2 and 1 will be carried out in August 2023 and September 2023. 11th PSS (17-11-2022): SDSTPP mentioned that Retuning of units 1 and 2 will be carried out in 3 months (by February 2023).
	3	800	24-09-24	24-09-29	15th PSS (23-05-2025): Damping at lower step of 3% in SRT is not effective. No. of Oscillations are same with PSS ON and OFF. SDSTPS to clarify. Parameters for AVR and PSS model to be submitted. PSS/E model data for Governor and generator to be submitted. 14th PSS: APGENCO replied through mail that for Unit 3, PSS tuning will be completed by October 2024.
Srisailam RB HEP	1	110	06-10-20	06-10-25	16th PSS (13-07-2026): Srisailam RB HEP representative stated that R&M works are planned. SCADA upgradation is planned to be completed in the 1st qtr of next year. Subsequently change in governing system (electrical and mechanical governors) is planned in a phased manner. Subsequently PSS tuning is also planned in phased manner.
	2	110	06-10-20	06-10-25	
	3	110	06-10-20	06-10-25	
	4	110	06-10-20	06-10-25	
	5	110	06-10-20	06-10-25	
	6	110	06-10-20	06-10-25	
	7	110	06-10-20	06-10-25	8th PSS (20.04.2021): Channel changeover test also to be done in the future. PSS parameters, Exciter parameters, functional block diagram to be furnished.
Lower Sileru HEP	1	115	13-12-16	13-12-21	16th PSS (13-07-2026): Lower Sileru representative stated that due date for tendering process for replacement of excitation system in all the 4 units is end of July 26. Subsequently PO will be placed and the replacement of excitation system is planned to be carried out in 6 months period. 15th PSS (23-05-2025): LSR representative mentioned that tendering is in process for replacement of excitation system replacement. R&M

				Works are expected to be completed by Dec 2025. PSS tuning will be subsequently taken up. 14th PSS: APGENCO replied through mail that LSR Unit 1: PSS tuning yet to be started (after discussions with higher management) (Expert service person not available at ABB for Unital 5000 rectification Problem). Will be taken up after R&M 12th PSS (26-05-2023): RLA studies for all the 4 units were completed. Final report was submitted. Two options, Complete R&M of the units or Complete replacement of the generators. were proposed. Management decision is awaited.
Recommendation: LSR connected interstate lines are tripping frequently. It may lead to generation loss or local disturbance. PSS tuning to be carried out.				
2	115	14-08-21	14-08-26	16th PSS (13-07-2026): Lower Sileru representative stated that due date for tendering process for replacement of excitation system in all the 4 units is end of July 26. Subsequently PO will be placed and the replacement of excitation system is planned to be carried out in 6 months period. 10th PSS (28-04-2022): Testing may be done at two different loadings and also both the channels in the future. Generator data to be submitted. Oscillations in steady state may be looked into.
3	115	-	-	16th PSS (13-07-2026): Lower Sileru representative stated that due date for tendering process for replacement of excitation system in all the 4 units is end of July 26. Subsequently PO will be placed and the replacement of excitation system is planned to be carried out in 6 months period. 15th PSS (23-05-2025): LSR representative mentioned that tendering is in process for replacement of excitation system replacement. R&M Works are expected to be completed by Dec 2025. PSS tuning will be subsequently taken up. 14th PSS: APGENCO replied through mail that for Units 3 and 4: PSS tuning to be taken up after R&M with approval of the management.
4	115	-	-	

				RLA completed. Due to Unit 5 and 6 Erection activities, implementation of R&M for units could not be taken up immediately as space constraints at site and also proposed installed capacity uprating proposed in RLA. However DPR for R&M is in progress. Target date is Dec 2025. 11th PSS (17-11-2022): APGENCO had mentioned that replacement of excitation system was suggested after the RLA study. It may take upto one and half year. Later PSS tuning will be carried out 10th PSS(28-04-2022): APGENCO had informed that RLA study is completed for units 3 & 4. Report is awaited .Existing system is UNITROL B for Units 3 & 4. PSS tuning facility is not there.
Recommendation: As per CEA connectivity Regulation, all units above 100 MW installed capacity should have PSS and it should be tuned. APGENCO may explore the possibility of incorporating PSS function urgently for the units 3 & 4.				

b) AP-IPPs:

Station	Status of PSS tuning				Observations / Comments
	Unit	MW	Previous Date of Tuning	Due date	
HNPCL	1	520	28-03-17	28-03-22	16th PSS (13-07-2026): APSLDC informed that HNPCL is planning to carry out PSS tuning for the 2 units after their OHs planned in September 2026 and November 2026.
	2	520	27-03-17	27-03-22	15th PSS (23-05-2025): APSLDC informed HNPCL carried out PSS tuning for Unit 2 in December 2023. Report may be furnished by HNPCL. PSS tuning schedule w.r.t Unit 1 would be communicated by HNPCL. 11th PSS (17-11-2022): HNPCL had mentioned that replacement of AVR for both the units is planned in 3 months. PSS tuning will be carried out.
SEIL P-II	2	660	02/03-08-22	03-08-27	15th PSS (23-05-2025)/12thPSS (26-05-2023)/11th PSS (17-11-2022): Jeq, M, H values with units along with damping toque calculation details to be furnished for both the units 14th PSS: SEIL P-II mentioned that they are pursuing with OEM to get the data.

c) KPCL:

Station	Status of PSS tuning				Observations / Comments
	Unit	MW	Previous Date of Tuning	Due date	
Raichur TPS	1	210	22-12-21 to 08-01-22	08-01-27	16th PSS (13-07-2026): KPCL representative stated that PSS tuning would be taken up along with periodic testing during this year. The schedule would be furnished. 10th PSS (28-04-2022)/14th PSS: Testing to be carried out at two different steps. Generator, PSS, AVR data to be submitted. Damping torque calculation to be furnished (ΔD).
	2	210	22-12-21	22-12-26	16th PSS (13-07-2026): KPCL representative stated that PSS tuning would be taken up along with periodic testing during this year. The schedule would be furnished. 10th PSS (28-04-2022)/ 14th PSS: Testing to be carried out at two different steps. Generator, PSS, AVR data to be submitted. Damping torque calculation to be furnished (ΔD).
	3	210	07-10-22	07-10-27	11th PSS (17-11-2022): Testing to be done at 2 different steps.
	4	210	07-11-22	07-11-27	11th PSS (17-11-2022): Testing to be done at 2 different steps
	5	210	23-07-24	23-07-29	15th PSS (23-05-2025): KPCL communicated the following: It was informed to recalculate the damping torque with the values from the report. The same was done with different. However, it is to inform that the values taken from the waveforms for the calculations are in order but the desired value of delta D could not be achieved. The same was taken up with M/s BHEL and M/s BHEL has reported that, it may not be possible to achieve the desired delta D value with the brushless excitor. Further, it has been decided to repeat the tests at full load to achieve the better delta D. It is proposed that the test on Unit-5, 6, 7 & 8 would
	6	210	24-07-24	24-07-29	
	7	210	20-07-23	20-07-28	
	8	250	24-07-24	24-07-29	

					be carried out by the end of Aug-2025. SRPC has responded that simulation studies may first be carried out by RTPS. Only if significantly better gain parameters and improved ΔD are observed in the simulation study, should a field test be considered by RTPS. Subject to the results of the simulation study, and if deemed necessary, RTPS may opt to conduct a field test. AVR tuning may also be planned by the generator. 14th PSS: For Units 5,6 and 8: All tests as per PSS tuning procedure are not carried out. Simulation studies not furnished. PSS tuning is not satisfactory from the submitted plots. ΔD is less than 10. PSS parameters to be furnished. AVR, Governor parameters to be furnished. Final implemented settings to be furnished. Revised detailed report with graphs replotted with stored data to be furnished with above mentioned data. 13th PSS (19-10-2023): PSS tuning is not satisfactory from the submitted plots. Testing to be carried out at two different loadings and two different steps in the future. Revised plots with the recorded data to be furnished. The data sheets for Generator, Exciter, Governor and Stabilizer model to be furnished.
Bellary TPS	1	500	23-11-20	23-11-25	16th PSS (13-07-2026): Bellary TPS representative stated that OEM(BHEL) was approached regarding PSS tuning for all the 3 units. Details would be furnished shortly. 15th PSS (23-05-2025): KPCL communicated that OEM (M/s BHEL) was requested to furnish the offer for conducting PSS tuning tests for Unit 1, 2 & 3 at BTPS as per new procedure issued by SRPC in Sept-2023. In return M/s BHEL has replied that Simulation
	2	500	24-11-20	24-11-25	
	3	700	02-04-21	02-04-26	

				Studies to be carried out before PSS Tuning is under development and the same would be informed once ready. Otherwise testing/tuning will be based on the BHEL procedure which is mostly same as in the SRPC guideline. On a query from BTPS representative, SRPC observed that PSS tuning may be carried out as per the timelines and PSS tuning procedure of SR. The tests that are feasible may be carried out by the generator or the OEM. For the tests that are unable to conduct, the technical reasons for the same may kindly be furnished by the generator/OEM. 14th PSS: KPCL mentioned that they have contacted OEM M/s BHEL. OEM replied that the plots are taken from the recorder, setting of which is done at the time of PSS tuning. The effects of PSS on damping can be clearly understood from the plots. Further, once these plots are captured by reorder, it will not be feasible to change the settings for ease of understanding. This must be taken into consideration that effect of PSS damping in brushless system will be in this fashion only . KPCL mentioned that in the next PSS tuning, all corrections would be made and PSS tuning would be carried out as per procedure. 11th PSS (17-11-2022): BTPS to furnish the updated data/calculation for analysis 9th PSS (20-07-2021): No conclusion can be made regarding the effectiveness of PSS from the furnished plots. Plots with appropriate scale to be furnished after discussing with OEM.
Yeramarus TPS	1	800	N	16th PSS (13-07-2026): YTPS representative stated that PSS tuning for Unit 1 would be carried out after the Unit OH which is tentatively planned from 18.07.26 for 1 month duration. 15th PSS (23-05-2025): YTPS representative mentioned that U-1 DAVR Channel-1 issue is rectified. PSS tuning for units 1 and 2 is planned to be completed during this year AOH by November 2025. U-2 Turbine Control valve is not yet rectified. 14th PSS: KPCL replied that for Yeramarus TPS, U-1 DAVR Channel-1 rectification will be taken

					during AOH works. PSS tuning is tentatively planned during Dec 24/Jan 25. U-2 Turbine Control valve vibration will be attended by M/s BHEL, later PSS tuning will be taken up. SRPC mentioned that in the earlier meetings, CEA had taken a note on BHEL issues. The earlier update was that KPCL had already taken up the issue with BHEL wrt YTPS U2. YTPS representative replied that the matter was already taken up with BHEL. BHEL visit is planned in August 24 last week to YTPS for analysis of the issue with U2. Depending on the outcome of findings of OEM(BHEL), rectification is planned. 12th PSS (26-05-2023): YTPS mentioned there are Communication issues with AVR of Units 1 and 2. It is taken up with OEM. 11th PSS (17-11-2022): YTPS mentioned that the PSS tuning for both the units is planned by January 2023.
	2	800	10-11-25 to 13-11-25	10-11-30 to 13-11-30	16th PSS (13-07-2026): All tests as per PSS tuning procedure are not carried out. Simulation studies not furnished. The following observations are made from the report furnished: PSS/E model data for Governor and generator, AVR in standard IEEE or PSS/E, SMIB equivalent model with .dyr file may be furnished.
Varahi UGPH HEP	1	115	09-11-22	09-11-27	14th PSS: In the updated data received, ΔD is in the range of 14-17 11th PSS (17-11-2022): Real power oscillations are damped with PSS ON but ΔD is very less for the 4 units. To be rechecked and confirmed by KPCL. To be carried out at 2 different steps.
	2	115	09-11-22	09-11-27	
	3	115	10-11-22	10-11-27	
	4	115	10-11-22	10-11-27	
Nagjheri HEP	1	150	4/5-1-2017	04-01-22	16th PSS (13-07-2026): KPCL representative stated that tender was called for the replacement of DAVRs in the units. After replacement, the PSS tuning would be carried out. 15th PSS (23-05-2025): NPH representative informed that tender was floated earlier in Sept-2024. No bids received.
	2	150	4/5-1-2017	04-01-22	
	4	150	4/5-1-2017	04-01-22	
	5	150	4/5-1-2017	04-01-22	

6	135	17-08-17	17-08-22	New DPR under preparation for appraising to KERC. After KERC approval NIT will be issued. The possibility of conducting PSS tuning with the existing DAVR was examined with M/s Andritz. The OEM informed that the existing DAVRs are outdated and not suitable for carrying out PSS tuning in the current system. KPCL/NPH is also exploring the option of conducting PSS tuning through external agencies other than the OEM, in the event that the tender for replacement of DAVRs does not materialize. 14th PSS: KPCL replied that a. R&M of Excitation system of NPH units under progress. (Administrative approval obtained & NIT may be issued in last week of Aug-2024). Target date is tentatively 1 year. Later PSS tuning is planned. b. Unit-3 PSS tuning offer received from BHEL & the firm quoted price is higher side. Hence opined to unit 3 PSS test along with other units after Excitation system replacement works 12th PSS (26-05-2023): NPH mentioned that tender is at final stage at HO. It will be completed in 1 year. 11th PSS (17-11-2022): KPCL mentioned that tender preparation for replacement of excitation system is going on. Works may be completed in 1 yr. Then PSS tuning will be taken up.
3	150	22-01-26	22-01-31	16th PSS (13-07-2026): All tests as per PSS tuning procedure are not carried out. Simulation studies not furnished. The following observations are made from the report furnished: Testing needs to be carried out in both the channels. Higher step change needs to be considered in SRT. PSS/E model data for Governor and generator, AVR and PSS parameters in standard IEEE or PSS/E models, SMIB equivalent model with .dyr file may be furnished. 15th PSS (23-05-2025): KPCL informed that earlier it was planned to take up PSS tuning of U-3 along with other Units after Excitation system replacement works. However, considering delay in placing work order it is now proposed to take up PSS

					tuning of Unit-3 separately with M/s BHEL. The process of obtaining offer from BHEL is under progress. 9th PSS (20.07.2021): Active power plot to be shown with appropriate scale. Testing to be carried out at two different steps It is preferred that SRT is carried out in both the channel 1 and channel 2 Damping torque calculation to be rechecked (p1, p2 values when PSS off to be clarified, Td=0 in this case). The data sheets for Generator, Exciter, Governor and Stabilizer Model along with final settings to be provided.
Sharavathy HEP	1	103.5	05-04-21	05-04-26	16th PSS (13-07-2026): Sharavathy HEP representative stated that Excitation system replacement works order is placed. Works were completed in 5 units. Replacement in other units is planned by March 2027. Later PSS tuning will be planned in the Q1 of FY 2027-28 15th PSS (23-05-2025): KPCL informed that Job Order placed on M/s AHPL on 05.08.2024. The expected date of completion of works is 25.05.2026. PSS test of each Unit(1-10) would be carried out after completion of Excitation system replacement works. 14th PSS: Excitation system replacement works order is placed. Later PSS tuning will be carried out. 9th PSS (20.07.2021): Testing to be carried out at two different steps. It is preferred that SRT is carried out in both the channel 1 and channel 2. Damping torque calculation to be rechecked and furnished along with Jeq, H, M values. The data sheets for Generator, Exciter, Governor and Stabilizer Model along with final settings to be provided.
	2	103.5	03-04-21	03-04-26	16th PSS (13-07-2026): Sharavathy HEP representative stated that Excitation system replacement works order is placed. Works were completed in 5 units. Replacement in other units is planned by March 2027. Later PSS tuning will be planned in the Q1 of FY 2027-28 14th PSS: Excitation system replacement works order is placed. Later PSS tuning will be carried out.

				9th PSS (20.07.2021): Testing to be carried out at two different steps. It is preferred that SRT is carried out in both the channel 1 and channel 2. Damping torque calculation to be rechecked and furnished along with Je_q, H, M values. The data sheets for Generator, Exciter, Governor and Stabilizer Model along with final settings to be provided.
3	103.5	18-10-22	18-10-27	16th PSS (13-07-2026): Sharavathy HEP representative stated that Excitation system replacement works order is placed. Works were completed in 5 units. Replacement in other units is planned by March 2027. Later PSS tuning will be planned in the Q1 of FY 2027-28 14th PSS: Excitation system replacement works order is placed. Later PSS tuning will be carried out. 11th PSS (17-11-2022): Reports with appropriate scale may be furnished. The data sheets for Generator, Exciter, Governor and Stabilizer Model along with final settings to be provided.
4	103.5	05-04-21	05-04-26	16th PSS (13-07-2026): Sharavathy HEP representative stated that Excitation system replacement works order is placed. Works were completed in 5 units. Replacement in other units is planned by March 2027. Later PSS tuning will be planned in the Q1 of FY 2027-28 14th PSS: Excitation system replacement works order is placed. Later PSS tuning will be carried out. 9th PSS (20.07.2021): Testing to be carried out at two different steps. It is preferred that SRT is carried out in both the channel 1 and channel 2. Damping torque calculation to be rechecked and furnished along with Je_q, H, M values. The data sheets for Generator, Exciter, Governor and Stabilizer Model along with final settings to be provided.
5	103.5	07-04-21	07-04-26	16th PSS (13-07-2026): Sharavathy HEP representative stated that Excitation system replacement works order is placed. Works were completed in 5 units. Replacement in other units is planned by March

				2027. Later PSS tuning will be planned in the Q1 of FY 2027-28 14th PSS: Excitation system replacement works order is placed. Later PSS tuning will be carried out. 9th PSS (20.07.2021): Testing to be carried out at two different steps. It is preferred that SRT is carried out in both the channel 1 and channel 2. Damping torque calculation to be rechecked and furnished along with Je_q, H, M values. The data sheets for Generator, Exciter, Governor and Stabilizer Model along with final settings to be provided.
6	103.5	25-09-21	25-09-26	16th PSS (13-07-2026): Sharavathy HEP representative stated that Excitation system replacement works order is placed. Works were completed in 5 units. Replacement in other units is planned by March 2027. Later PSS tuning will be planned in the Q1 of FY 2027-28 14th PSS: Excitation system replacement works order is placed. Later PSS tuning will be carried out. 11th PSS (17-11-2022): Testing to be done at two different step change. Damping torque calculation along with data sheets to be furnished.
7	103.5	19-10-22	19-10-27	16th PSS (13-07-2026): Sharavathy HEP representative stated that Excitation system replacement works order is placed. Works were completed in 5 units. Replacement in other units is planned by March 2027. Later PSS tuning will be planned in the Q1 of FY 2027-28 14th PSS: Excitation system replacement works order is placed. Later PSS tuning will be carried out. 11th PSS (17-11-2022): Reports with appropriate scale may be furnished. The data sheets for Generator, Exciter, Governor and Stabilizer Model along with final settings to be provided.
8	103.5	04-11-22	04-11-27	16th PSS (13-07-2026): Sharavathy HEP representative stated that Excitation system replacement works order is placed. Works were completed in 5 units.

					Replacement in other units is planned by March 2027. Later PSS tuning will be planned in the Q1 of FY 2027-28 14th PSS: Excitation system replacement works order is placed. Later PSS tuning will be carried out. 11th PSS (17-11-2022): Reports with appropriate scale may be furnished. The data sheets for Generator, Exciter, Governor and Stabilizer Model along with final settings to be provided.
	9	103.5	18-10-22	18-10-27	16th PSS (13-07-2026): Sharavathy HEP representative stated that Excitation system replacement works order is placed. Works were completed in 5 units. Replacement in other units is planned by March 2027. Later PSS tuning will be planned in the Q1 of FY 2027-28 14th PSS: Excitation system replacement works order is placed. Later PSS tuning will be carried out. 11th PSS (17-11-2022): Reports with appropriate scale may be furnished. The data sheets for Generator, Exciter, Governor and Stabilizer Model along with final settings to be provided.
	10	103.5	10-11-22	10-11-27	16th PSS (13-07-2026): Sharavathy HEP representative stated that Excitation system replacement works order is placed. Works were completed in 5 units. Replacement in other units is planned by March 2027. Later PSS tuning will be planned in the Q1 of FY 2027-28 14th PSS: Excitation system replacement works order is placed. Later PSS tuning will be carried out. 12th PSS (26-05-2023): Testing to be done at two different steps in the future. Dynamic data of PSS/Gen to be furnished.
d) KAR – IPPs					
JSWEL	1 (SBU2)	300	12-02-24	12-02-29	14th PSS: All tests as per PSS tuning procedure are not carried out. Simulation studies not furnished.

					Damping is not evident from the plots. SRT to be carried out at 2 different steps in the future. Equivalent PSS/E model parameters to be furnished. Governor and Generator parameters to be furnished. Damping calculation to be furnished. 13th PSS (19-10-2023): PSS tuning is not satisfactory. No conclusion can be made from the submitted plots. SRT to be carried out at two different steps in the future. Generator, AVR, Governor data & PSSE models, damping calculation and Final implemented settings to be furnished.
	2 (SBU2)	300	08-06-22	08-06-27	14th PSS: All tests as per PSS tuning procedure are not carried out. Simulation studies not furnished. Damping is not evident from the plots. SRT to be carried out at 2 different steps in the future. Equivalent PSS/E model parameters to be furnished. Governor and Generator parameters to be furnished. Damping calculation to be furnished. 12th PSS (26-05-2023): PSS tuning to be taken up shortly.
	3 (CPP3)	300	11-08-23	11-08-28	14th PSS: All tests as per PSS tuning procedure are not carried out. Simulation studies not furnished. Damping is not evident from the plots. SRT to be carried out at 2 different steps in the future. Equivalent PSS/E model parameters to be furnished. Governor and Generator parameters to be furnished. Damping calculation to be furnished. 13th PSS (19-10-2023): PSS tuning is not satisfactory. No conclusion can be made from the submitted plots.

					SRT to be carried out at two different steps in the future. Generator, AVR, Governor data & PSSE models, damping calculation and Final implemented settings to be furnished.
	4 (CPP4)	300	18-05-22	18-05-27	11th PSS (17-11-2022): No conclusion can be made from the submitted plots. JSWEL to submit all the plots with data sheets and calculation for analysis.
APL-Udupi	1	600	18-02-21	18-02-26	16th PSS (13-07-2026): APL-Udupi representative mentioned that PSS tuning is planned for both the units, after Hebbanahalli works are completed are completed by September 2026. 15th PSS (23-05-2025): APL-Udupi representative mentioned that PSS tuning is planned in April 2026. 9th PSS (20.07.2021): Active power plot to be shown with appropriate scale. Damping torque calculation to be furnished. Variation in PSS o/p plot to be clarified when PSS is OFF
	2	600	18-02-21	18-02-26	9th PSS (20.07.2021): Active power plot to be shown with appropriate scale. Damping torque calculation to be furnished. Variation in PSS o/p plot to be clarified when PSS is OFF

e) KSEBL:

Station	Status of PSS tuning				Observations / Comments
	Unit	MW	Previous Date of Tuning	Due date	
Idukki HEP	1	130	15-12-21	15-12-26	16th PSS (13-07-2026): Idukki HEP representative stated that PSS tuning for units 1 to 3 would be tentatively planned by December 2026 and PSS tuning schedule once finalized would be furnished. 10th PSS (28-04-2022): SRT to be conducted at two different steps in the future. Reports to be submitted with clear scale with present data. Generator, Excitor, Governor data to be submitted. Damping torque calculation to be checked.

2	130	15-12-21	15-12-26	16th PSS (13-07-2026): Idukki HEP representative stated that PSS tuning for units 1 to 3 would be tentatively planned by December 2026 and PSS tuning schedule once finalized would be furnished. 10th PSS (28-04-2022): SRT to be conducted at two different steps in the future. Reports to be submitted with clear scale with present data. Generator, Excitor, Governor data to be submitted. Damping torque calculation to be checked.
3	130	15-12-21	15-12-26	16th PSS (13-07-2026): Idukki HEP representative stated that PSS tuning for units 1 to 3 would be tentatively planned by December 2026 and PSS tuning schedule once finalized would be furnished. 10th PSS (28-04-2022): Reports to be submitted with clear scale with present data. Generator, Excitor, Governor data to be submitted. Damping torque calculation to be checked.
4	130	N		16th PSS (13-07-2026): Idukki HEP representative stated that R&M works for Units 4 & 5 are expected to be completed by 2030. After the R&M works, PSS tuning can be taken up. 14th PSS: KSEBL representative mentioned that wrt Idukki Units 4 and 5, the excitation system is old Analog system. RLA study was completed. It was proposed to replace excitation system, governor system and upgradation of the control system. R&M works are expected to be completed by 2026 end/ 2027. After the R&M works, PSS tuning is planned.
5	130	N		12th PSS (26-05-2023): Replacement of old excitation system is expected to be completed by August 2023. Then PSS tuning will be taken up. RLA studies are ongoing for units 4 and 5. After RMU works and old excitation system replacement works complete in 2025, PSS tuning is planned for units 4 and 5.
6	130	09-11-23	09-11-28	14th PSS: All tests as per PSS tuning procedure are not carried out. Simulation studies not furnished. PSS parameters to be furnished.

					AVR, Governor parameters to be furnished. Final implemented settings to be furnished. Revised report shall be furnished with above information.
f) TNPGL:					
Station	Status of PSS tuning				Observations / Comments
	Unit	MW	Previous Date of Tuning	Due date	
NCTPS Stage-I	1	210	09.07.21, 12.07.21	12-07-26	16th PSS (13-07-2026): NCTPS St-I representative stated that PSS tuning for all the 3 units is planned by July 26 end. 10th PSS (28-04-2022): SRT analysed
	2	210	29-01-21	29-01-26	16th PSS (13-07-2026): NCTPS St-I representative stated that PSS tuning for all the 3 units is planned by July 26 end. SRT analysed
	3	210	29-01-21	29-01-26	16th PSS (13-07-2026): NCTPS St-I representative stated that PSS tuning for all the 3 units is planned by July 26 end. SRT analysed
NCTPS Stage-II	1	600	30-12-22	30-12-27	15th PSS (23-05-2025)/14th PSS: NCTPS St-II mentioned that they are pursuing with OEM to get the data. 13th PSS (19-10-2023): PSS effectiveness is not there as per the submitted plots. Generator, AVR, Governor and PSS parameters & PSSE models to be furnished.
	2	600	23/24-08-22	24-08-27	15th PSS (23-05-2025)/14th PSS: NCTPS St-II mentioned that they are pursuing with OEM to get the data. 13th PSS (19-10-2023): PSS effectiveness is not there as per the submitted plots. Generator, AVR, Governor and PSS parameters & PSSE models to be furnished.

NCTPS Stage-III	1	600			16th PSS (13-07-2026): NCTPS St-III representative stated that PSS tuning would be taken up during AOH tentatively planned during September/October 26.
Tuticorin TPS	1	210	06-10-21	06-10-26	16th PSS (13-07-2026): NCTPS St-I representative stated that U1 works/revival after fire accident are expected to be completed in September 26. PSS tuning is planned in December 2026. 10th PSS (28.04.2022): SRT analysed
	2	210	22-12-22	22-12-27	16th PSS (13-07-2026): NCTPS St-I representative stated that U2 works/revival after fire accident are expected to be completed in July 26. 12th PSS (26-05-2023): PSS O/P may also be plotted during future testing
	3	210	25-11-22	25-11-27	12th PSS (26-05-2023): PSS O/P may also be plotted during future testing
	4	210	10/11-01-23	10/11-01-28	14th PSS: TTPS mentioned that the data would be mailed shortly. 12th PSS (26-05-2023): PSS O/P may also be plotted during future testing. Generator data, PSSE model data for Exciter and PSS Parameters to be furnished.
	5	210	15-03-21	15-03-26	16th PSS (13-07-2026): PSS tuning is planned in December 2026. 14th PSS: TTPS mentioned that the data would be mailed shortly. 8th PSS (20-04-2021): Generator data sheet, Excitor block diagram along with damping torque calculation to be furnished
Mettur TPS St-I	1	210	14-09-23	14-09-28	14th PSS: Data/Parameters were furnished for Unit 1. 13th PSS (19-10-2023): Constant values (T_6 , T_R), PSS/E model to be furnished for Exciter, Governor & Generator along with final implemented settings

	2	210	08-04-21	08-04-26	16th PSS (13-07-2026): MTPS St-I representative stated that U2 is having Thyne 5 controller. OEM (Andritz Hydro) informed that upgradation of controller is required for carrying out simulation and field test as per the latest PSS tuning procedure. Upgradation of the controller is planned in January 2029. Subsequently, Periodic testings along with PSS tuning is planned. Note: MTPS may plan excitation system replacement similar to NLCIL TPS-II Unit 5, which was carried out during AOH. 14th PSS: MTPS mentioned that Errors would be rectified during the next PSS tuning as per the tuning procedure. 11th PSS (17-11-2022): MTPS mentioned that PSS retuning is planned in consultation with OEM 8th PSS (20-04-2021): No conclusion from the submitted plots regarding effectiveness of PSS. MTPS may discuss with OEM to provide clearer plots with appropriate scale. To confirm Moment of Inertia "M" value and damping torque calculation. Generator data, Excitation system data to be furnished
	3	210	27-12-22	27-12-27	12th PSS (26-05-2023): PSS O/P may also be plotted during future testing
	4	210	28-12-22	28-12-27	16th PSS (13-07-2026): Upgradation of the controller is planned in January 2029. Subsequently, Periodic testings along with PSS tuning is planned. 12th PSS (26-05-2023): PSS O/P may also be plotted during future testing.
Mettur St-III TPS	1	600	08/13-09-23	08/13-09-28	15th PSS (23-05-2025) MTPS Stage III representative mentioned that the details would be furnished shortly. 13th PSS (19-10-2023): PSS o/p plot to be furnished with existing plots using the recorded data. PSS/E model to be furnished for Exciter, Governor & Generator along with final implemented settings.

Kadamparai HEP	1	100	22-08-17	22-08-22	16th PSS (13-07-2026): TNSLDC representative stated that Kadamparai units are presently under outage and are expected to revive by January 27 to March 27 period. Subsequently, the PSS tuning would be taken up. 14th PSS: TNSLDC representative mentioned that it was informed to Kadamparai Station to carry out PSS tuning for the Units. Presently 2 units are under outage. After revival of these 2 units, PSS tuning is planned to be carried out for all the 4 units. PSS tuning is planned to be completed before end of the year. 11th PSS (17-11-2022): TANGEDCO mentioned that PSS tuning for the units is planned in June 2023 /July 2023. 10th PSS (28.04.2022): PSS tuning/SRT is planned by June/July 2022. 7th PSS: It is preferred that SRT is carried out in both the channel 1 & 2. Damping torque calculation needs to be furnished. SRT should be carried out at a) >80% loading and b) between 50% to 80% loading range preferably at lower load in future
	2	100	22-08-17	22-08-22	
	3	100	22-08-17	22-08-22	
	4	100	22-08-17	22-08-22	
STCMS (IPP)	1	250	22-09-23	22-09-25	15th PSS (23-05-2025): PSS tuning to be carried out in both the channels 1 and 2 in the future. SRT to be carried out at higher step also in the future (at 5%). PSS tuning to be carried out at 2 loads(close to TM and also full load). Damping calculation to be furnished. Parameters for AVR and PSS model to be furnished. PSS/E model data for Governor and generator to be furnished. All the Simulations/tests mentioned in the PSS procedure to be ensured by the generator. 14th PSS: TNSLDC representative mentioned that they have informed to STCMS and SEPC regarding PSS tuning. 11th PSS (17-11-2022): Slight decrease in amplitude of power oscillation is observed as per the graph. Points mentioned in the Record notes to be ensured while PSS tuning is carried out. Damping torque calculation and final

					implemented setting with data to be furnished. STCMS mentioned that retuning of PSS to be taken up in January/February 2023
SEPC (IPP)	1	525	15/16-05-24		15th PSS (23-05-2025): No Damping is visible from the plots. Suggested to re-perform the PSS tuning with all Simulation studies/field tests mentioned in the PSS tuning procedure. Parameters for AVR and PSS model to be submitted by SEPC. PSS/E model data for Governor and generator to be submitted by SEPC. 11th PSS (17-11-2022): SEPC mentioned that PSS tuning is planned in December 2022.

g) TGGENCO:					
Station	Status of PSS tuning				Observations / Comments
	Unit	MW	Previous Date of Tuning	Due date	
Kakatiya TPS	1	500	30-09-22	30-09-27	15th PSS (23-05-2025): Kakatiya TPS representative mentioned that Dynamic data of PSS/Gen is awaited from OEM. 12th PSS (26-05-2023): Testing to be done at two different steps in the future. Dynamic data of PSS/Gen to be furnished.
	2	600	30-09-22	30-09-27	15th PSS (23-05-2025): Kakatiya TPS representative mentioned that Dynamic data of PSS/Gen is awaited from OEM. 12th PSS (26-05-2023): Testing to be done at two different steps in the future. Dynamic data of PSS/Gen to be furnished.
Kothagudem TPS	9	250	12/13-09-22	13-09-27	15th PSS (KTPS U 10): Parameters for the Generic/Standard IEEE models of AVR and PSS shall be submitted. ΔD is less than 10 for majority of cases. SRT is not effective. (Response can be further improved).
	10	250	21-11-24	21-11-29	For brushless machines, the Tripping of any transmission line connected to the generating

				station may be done to simulate the effect of change in Vref. PSS/E model data for Generator and Governor may be furnished. Simulation studies/Other tests are not carried out by KTPS as per the PSS tuning procedure. Technical reasons for the same may be furnished by KTPS. Revised plots may be resubmitted with appropriate scale to be furnished by KTPS. 14th PSS: KTPS mentioned that U10 PSS tuning would be carried out after the AOH (undergoing). 12th PSS (26-05-2023): AVR replacement for U10 is planned during unit OH during Sep23/Oct23. Then PSS will be taken up. PSS tuning/SRT for U9 will also be taken up. 11th PSS (17-11-2022): Unit 9: No conclusion can be made from the submitted plots. Kothagudem TPS to submit all the consolidated plots with data sheets and calculation for analysis.
11	500	13-03-23	13-03-28	15th PSS (23-05-2025): The representative from Kothagudem TPS stated that, according to the OEM, there was a decrease in the peak magnitude of oscillations when the Power System Stabilizer (PSS) was activated. This represents the maximum achievable response from the brushless excitation system for this particular machine. SRPC mentioned that the OEM correspondence may be furnished by Kothagudem TPS. 12thPSS (26-05-2023): No. of real power oscillations are same with PSS ON and OFF. Dynamic data of PSS/Gen to be furnished.
12	800	10-03-23	10-03-28	15th PSS (23-05-2025): The representative from Kothagudem TPS stated that, according to the OEM, there was a decrease in the peak magnitude of oscillations when the Power System Stabilizer (PSS) was activated. This represents the maximum achievable response from the brushless excitation system for this particular machine.

					SRPC mentioned that the OEM correspondence may be furnished by Kothagudem TPS. 12th PSS (26-05-2023): No. of real power oscillations are same with PSS ON and OFF. Dynamic data of PSS/Gen to be furnished.
Bhadradri TPS	1	270	28-03-22	28-03-27	11th PSS (17-11-2022): SRT analysed
	2	270	28-03-22	28-03-27	11th PSS (17-11-2022): SRT analysed
	3	270	29-03-22	29-03-27	11th PSS (17-11-2022): SRT analysed
	4	270	29-03-22	29-03-27	11th PSS (17-11-2022): SRT analysed
Yadadri TPS	1	800	N		16th PSS (13-07-2026): Yadadri TPS representative stated: a) PSS tuning for Unit 4 for carried out. Only SRT was done. The report would be furnished. b) PSS tuning for Units 1 & 2 is tentatively planned in September 26. c)CoD of Unit 5 is expected in September/October 26.
	2	800	N		
	3	800	N		
	4	800	N		
	5	800	N		
Nagarjuna-sagar HEP	1	100.8	04-03-17	04-03-22	16th PSS (13-07-2026): Nagarjunasagar HEP representative mentioned that they have pursued the matter with OEM and also taken quotation from 3rd party for Unit 1. They are waiting for the reply from OEM. Depending on the OEM reply, subsequently PSS tuning will be planned with OEM/3rd party. 15th PSS (23-05-2025): Nagarjunasagar HEP representative mentioned that they have been pursuing the matter with the ABB OEM for a long time; however, there has been no response from their end. Meanwhile, they have also indicated that our system is outdated and that they no longer support the required software. This has already been communicated to our headquarters, who are also actively following up with the OEM. Currently, Unit-1 is under Shutdown for capital overhaul. Efforts are being made to coordinate with ABB to take up PSS

					tuning after unit revival. 14th PSS: Nagarjunasagar HEP representative mentioned that wrt PSS tuning of Unit 1, from last 1-year, sufficient head was not available. Presently sufficient head is available and they are in correspondence with ABB for PSS tuning of the unit. Schedule would be communicated. May be planned in 2/3 months. 12th PSS (26-05-2023): PSS tuning/SRT is planned by September 2023. 11th PSS (17-11-2022): Nagarjunasagar HEP mentioned that PO is placed for PSS tuning with OEM. PSS tuning/SRT is planned by November/December 2022.
	2	100.8	14-08-21	14-08-26	16th PSS (13-07-2026):
	3	100.8	14-08-21	14-08-26	Nagarjunasagar HEP representative mentioned that for Units 2 to 8, the quotation procurement is being processed. 10th PSS (28-04-2022): For the Units 2 to 8, testing may be done at two different loadings and also at two different steps in the future. Generator data may be submitted. Oscillations at lower load may be looked into by discussing with OEM.
	4	100.8	14-08-21	14-08-26	
	5	100.8	14-08-21	14-08-26	
	6	100.8	14-08-21	14-08-26	
	7	100.8	14-08-21	14-08-26	
	8	110	14-08-21	14-08-26	
	Srisailem LB HEP	1	150	07-09-22	
2		150	07-09-22	07-09-27	Srisailem LB HEP representative mentioned that unit is expected to revive in August 2026. Subsequently, PSS tuning is expected to be carried out in 2 months period based on the dam level. 11th PSS (17-11-2022): Higher step change may be taken in future. Step up to be followed by step down with a time gap of 20 sec
3		150	07-09-22	07-09-27	
4		150	19-01-17	19-01-22	15th PSS (23-05-2025): Srisailem LB HEP representative mentioned that unit is expected to be on bar by September 25/October 25. Subsequently, PSS tuning is taken up. 14th PSS: Srisailem LB HEP representative mentioned that Unit 4 is out since 2022 due to fire incident. In 2023 also, after rectification, unit is out due to stator issue. Works are not yet completed. Works may be tentatively

				completed in the next season (March 2025). After unit revival, PSS tuning would be taken up. 11th PSS (17-11-2022): Srisailam LB HEP mentioned that renovation work may be completed by March 2023. PSS tuning can be done in the next season i.e. June /July 2023
5	150	07-09-22	07-09-27	11th PSS (17-11-2022): Higher step change may be taken in future. Step up to be followed by step down with a time gap of 20 sec
6	150	07-09-22	07-09-27	

SCCL

Station	Status of PSS tuning				Observations / Comments
	Unit	MW	Previous Date of Tuning	Due date	
Singareni Collieries TPP	U1	600	27/28-02-23	27/28-02-28	12th PSS (26-05-2023): Testing to be done at two different steps and two different loadings in the future. Dynamic data of PSS/Gen to be furnished.
	U2	600	27/28-02-23	27/28-02-28	12th PSS (26-05-2023): Testing to be done at two different steps and two different loadings in the future. Dynamic data of PSS/Gen to be furnished.

CGS:

h) NTPC:					
Station	Status of PSS tuning				Observations / Comments
	Unit	MW	Previous Date of Tuning	Due date	
RSTPS	1	200	17-05-24	17-05-29	15th PSS (23-05-2025): RSTPS representative mentioned that the Gov/Gen data is awaited from OEM. 14th PSS: All tests as per PSS tuning procedure are not carried out. Simulation studies not furnished. SRT to be carried out at 2 different steps in the future. PSS/E model data for Governor and generator

					may be shared Damping calculation not submitted Only PID parameters of AVR submitted. However, no equivalent PSS/E model data submitted. 11th PSS (17-11-2022): RSTPS mentioned that PSS tuning/SRT is planned by February 2023. 10th PSS (28.04.2022): NTPC informed that DAVR panel replacement is works are going on as presently U1 is under S/D for R&M works. PSS tuning is planned in June 2022 month.
	2	200	17-05-24	17-05-29	15th PSS (23-05-2025): RSTPS representative mentioned that the Gov/Gen data is awaited from OEM. 14th PSS: All tests as per PSS tuning procedure are not carried out. Simulation studies not furnished. SRT to be carried out at 2 different steps in the future. PSS/E model data for Governor and generator may be shared Damping calculation not submitted Only PID parameters of AVR submitted. However, no equivalent PSS/E model data submitted. 11th PSS (17-11-2022): RSTPS mentioned that PSS tuning/SRT is planned by February 2023. 10th PSS (28.04.2022): 105 days S/D for R&M is planned after revival of unit-1. New DVR is proposed. Then PSS tuning will be taken up
	3	200	17-05-24	17-05-29	15th PSS (23-05-2025): RSTPS representative mentioned that the Gov/Gen data is awaited from OEM. 14th PSS: All tests as per PSS tuning procedure are not carried out. Simulation studies not furnished. SRT to be carried out at 2 different steps in the future. PSS/E model data for Governor and generator may be shared Damping calculation not submitted Only PID parameters of AVR submitted. However, no equivalent PSS/E model data

				submitted. 11th PSS (17-11-2022): RSTPS mentioned that PSS tuning/SRT is planned by February 2023. 10th PSS (28.04.2022): NTPC informed that DAVR panel replacement is completed. PSS tuning is planned in May/June 2022 month.
4	500	14/15-11-25		16th PSS (13-07-2026): All tests as per PSS tuning procedure are not carried out. Simulation studies not furnished. • No visible confirmation from the plots • Damping calculation are not submitted • PSS/E model data for Governor and generator may be shared • AVR in standard IEEE/PSSE shall be shared • SMIB equivalent model with .dyr file shall be shared • NTPC may plan for testing at higher step change (5%) in the future, where the effect of damping could be more clearly observed, as was the case in some of the units where PSS tuning was carried out earlier ➤ No conclusion on effectiveness could be made from the plots furnished for unit 4. 15th PSS (23-05-2025): NTPC Ramagundam representative mentioned that PSS tuning for Unit 4 is planned in June 2025. All the Simulations/tests mentioned in the PSS procedure to be ensured by the generator. 14th PSS: PSS tuning for Units 4, 5 and 6 (Excitation system – Brushless- SIEMENS make) is planned to be carried out in September 2024. 11th PSS (17-11-2022): RSTPS mentioned that PSS tuning/SRT is planned by December 2022. 10th PSS (28.04.2022): NTPC informed that PSS tuning is planned in May 2022. 9th PSS (20.07.2021): NTPC Ramagundam informed that PSS tuning/SRT is planned after unit 4 overhaul in October 2021

				SRT may be also be carried out between 50% and 80% loading of the m/c. Damping torque calculation needs to be furnished. NTPC to discuss with OEM and revert back regarding oscillations. Clear SRT plots may be furnished
5	500	14/15-11-25		16th PSS (13-07-2026): All tests as per PSS tuning procedure are not carried out. Simulation studies not furnished. • No visible confirmation from the plots • Damping calculation are not submitted • PSS/E model data for Governor and generator may be shared • AVR in standard IEEE/PSSE shall be shared • SMIB equivalent model with .dyr file shall be shared • NTPC may plan for testing at higher step change (5%) in the future, where the effect of damping could be more clearly observed, as was the case in some of the units where PSS tuning was carried out earlier in units having brushless excitation system. ➤ No conclusion on effectiveness could be made from the plots furnished for units 5 and 6.
6	500	14/15-11-25		15th PSS (23-05-2025): NTPC Ramagundam representative mentioned that PSS tuning for Units 5 and 6 is planned in June 2025. All the Simulations/tests mentioned in the PSS procedure may be ensured by the generator. 14th PSS: PSS tuning for Units 4, 5 and 6 (Excitation system – Brushless- SIEMENS make) is planned to be carried out in September 2024. 11th PSS (17-11-2022): RSTPS mentioned that PSS tuning/SRT is planned by December 2022 for Unit 6 and January 2023 for Unit 5. 10th PSS (28.04.2022): NTPC informed that PSS tuning is planned in May 2022 for units 5 & 6. 9th PSS (20.07.2021):

					NTPC Ramagundam informed that PSS tuning / SRT is planned for the units 5 and 6 after that of unit 4. SRT should be carried out at >80% loading and 50% to 80% loading range in future. Damping torque calculation needs to be furnished.
	7	500	21/24-06-24		15th PSS (23-05-2025): No Damping is seen from the plots. Suggested to re-perform the PSS tuning. Simulation studies/Other tests are not carried out by RSTPS 7 as per the PSS tuning procedure. Technical reasons for the same may be furnished by RSTPS 7. Damping calculation to be submitted by RSTPS 7. Parameters for AVR and PSS model to be submitted by RSTPS 7. PSS/E model data for Governor and generator to be submitted by RSTPS 7. 14th PSS: NTPC Ramagundam representative informed that the PSS tuning for Unit 7 was carried out in July 2024. Report will be furnished shortly 11th PSS (17-11-2022): RSTPS mentioned that PSS tuning/SRT is planned by December 2022. 10th PSS (28.04.2022): NTPC Ramagundam informed that PSS tuning / SRT is planned during next overhaul. RSTPS to address the problem of hunting when PSS is ON by discussing the results with SRT agency
Simhadri STPS St- I & II	1	500	04-12-19	04-12-24	16th PSS (13-07-2026): NTPC Simhadri representative stated that PSS tuning for Unit 2 is planned during December 2026 and that for Unit 1 during December 2027.
	2	500	04-12-19	04-12-24	15th PSS (23-05-2025): NTPC Simhadri representative informed that the PSS tuning for all 4 units was carried out in April 2024. Final plots/Reports are not furnished. NTPC Simhadri representative informed that the OEM (BHEL) has indicated that the Frequency Response Test and the Impulse Test cannot be carried out. SRPC requested NTPC Simhadri to coordinate with the OEM to obtain the technical reasons for not conducting the tests,

				and to submit these reasons along with the final reports. 14th PSS: NTPC Simhadri representative informed that the PSS tuning for all 4 units was carried out in April 2024. Final reports will be furnished 10th PSS (28.04.2022): NTPC informed that PSS tuning is planned in June 2022 for all the units. 8th PSS (20.04.2021): No conclusion could be made from the submitted plots. Proper plots to be resubmitted with appropriate scale. The Generator, Exciter, Governor and Stabilizer Model along with final settings and damping torque calculation to be provided
3	500	25-04-26	25-04-31	16th PSS (13-07-2026): All tests as per PSS tuning procedure are not carried out. Simulation studies not furnished. The following is observed from the data furnished: Higher step change also needs to be considered in the future. Transfer function block diagram for the BHEL (UDM), PSS/E model data for Governor and generator, AVR and PSS parameters in standard IEEE/PSSE, SMIB equivalent model with .dvr file may be furnished. Damping is not effective at lower load. The same to be clarified by NTPC Simhadri after taking the matter up with OEM.
4	500	23/28-04-26	23/28-04-31	16th PSS (13-07-2026): All tests as per PSS tuning procedure are not carried out. Simulation studies not furnished. The following is observed from the data furnished: Higher step change also needs to be considered in the future. Damping is not effective at lower load. Damping calculation at lower load (at 58%), Transfer function block diagram for the BHEL (UDM), PSS/E model data for Governor and generator, AVR and PSS parameters in standard IEEE/PSSE, SMIB equivalent model with .dvr file may be furnished. Damping is not effective at lower load. The

					same to be clarified by NTPC Simhadri after taking the matter up with OEM.
Talcher STPS St-II	3	500	July 22		16th PSS (13-07-2026): NTPC Talcher representative stated that PSS tuning detailed reports /data status would be collected from the OEM(BHEL) and would be furnished. SRPC observed that all the necessary graphs/plots to be shared by the generator for analysis. 15th PSS (23-05-2025): NTPC Talcher representative mentioned that Final report and data wrt observations wrt earlier PSS tuning will be furnished. Next PSS tuning is planned for all 4 units during Dec 25/Jan 26. 14th PSS: Detailed final report with all data/clear graphs to be furnished by NTPC Talcher for analysis. NTPC Talcher mentioned that they will pursue with OEM and furnish the detailed report with all clear graphs. 12th PSS (26-05-2023): Reports to be submitted. Not satisfactory. Report to be resubmitted as informed.
	4	500	July 22		15th PSS (23-05-2025): NTPC Talcher representative mentioned that Final report and data wrt observations wrt earlier PSS tuning will be furnished. Next PSS tuning is planned for all 4 units during Dec 25/Jan 26. 14th PSS: Detailed final report with all data/clear graphs to be furnished by NTPC Talcher for analysis. NTPC Talcher mentioned that they will pursue with OEM and furnish the detailed report with all clear graphs. 12th PSS (26-05-2023): Reports to be submitted. Not satisfactory. Report to be resubmitted as informed.
	5	500	17-12-22	17-12-27	15th PSS (23-05-2025): NTPC Talcher representative mentioned that Final report and data wrt observations wrt earlier PSS tuning will be furnished. Next PSS tuning is planned for all 4 units during Dec 25/Jan 26. 14th PSS:

					Detailed final report with all data/clear graphs to be furnished by NTPC Talcher for analysis. NTPC Talcher mentioned that they will pursue with OEM and furnish the detailed report with all clear graphs. 12th PSS (26-05-2023): Effective of damping is not evident from the plots. No. of oscillations are also same with PSS ON and OFF. Generator and PSS parameters to be submitted. Testing to be carried out at two different steps in the future.
	6	500	July 22		15th PSS (23-05-2025): NTPC Talcher representative mentioned that Final report and data wrt observations wrt earlier PSS tuning will be furnished. Next PSS tuning is planned for all 4 units during Dec 25/Jan 26. 14th PSS: Detailed final report with all data/clear graphs to be furnished by NTPC Talcher for analysis. NTPC Talcher mentioned that they will pursue with OEM and furnish the detailed report with all clear graphs. 12th PSS (26-05-2023): Reports to be submitted for analysis.
Kudgi STPS	1	800	18-02-22 to 25-02-22	25-02-27	16th PSS (13-07-2026): NTPC Kudgi representative stated that PSS tuning is tentatively planned during December 2026. 10th PSS (28.04.2022): Generator/Exciter/Governor data sheets to be submitted. Damping torque calculation using AD also to be furnished.
	2	800	19-02-22	19-02-27	16th PSS (13-07-2026): NTPC Kudgi representative stated that PSS tuning is tentatively planned during December 2026. 11th PSS (17.11.2022): PSS tuning to be carried at two different steps in the future. Jeq, M, H, G values involved in calculation to be furnished. Generator/AVR/Final settings to be furnished.
	3	800	20-02-22	20-02-27	16th PSS (13-07-2026):

					NTPC Kudgi representative stated that PSS tuning is tentatively planned during December 2026. 12th PSS (26-05-2023): Testing to be carried out at two different steps in the future
Telangana STPP	1	800	28-07-23	28-07-28	14th PSS: All tests as per PSS tuning procedure are not carried out. Simulation studies not furnished. SRT to be carried out at 2 different steps and 2 different loadings in the future. PSS/E model data for Governor, AVR and PSS parameters and generator to be furnished
	2	800	02-02-24	02-02-29	14th PSS: All tests as per PSS tuning procedure are not carried out. Simulation studies not furnished. SRT to be carried out at 2 different steps and 2 different loadings in the future. PSS/E model data for Governor, AVR and PSS parameters and generator to be furnished
NTECL, Vallur TPS	1	500	17-06-24		16th PSS (13-07-2026): NTECL representative stated their engineering team stated that the simulation studies would be carried out along with BESS compliance studies. The matter is also being pursued with BHEL engineering to get the necessary tests done. NTECL may pursue with OEM whether any plots with better data captured during testing is available. NTECL stated that OEM(BHEL) replied that obtaining ΔD atleast 10 for brushless excitation system may not be possible. The following is observed from the data furnished: All tests as per PSS tuning procedure are not carried out. Simulation studies not furnished. Damping calculations are not satisfactory, PSS/E equivalent model data along with the supporting datasheets. NTECL may plan retuning of PSS, if plots with better data captured during testing is not available. 15th PSS (23-05-2025): NTECL representative mentioned that Unit 1

					PSS tuning reports would be furnished shortly. 14th PSS: NTECL, Vallur representative informed that the PSS tuning for Unit 1 was carried out in June 2024. 11th PSS (17-11-2022): RSTPS mentioned that PSS tuning/SRT is planned by January 2023
	2	500	11-10-23		15th PSS (23-05-2025): The detailed final report for NTECL Units 2 and 3 including PSSE model/exciter/Generator/Governor data may be furnished for analysis. 14th PSS: Detailed final report may be submitted for analysis. 11th PSS (17-11-2022): NTECL mentioned that PSS tuning/SRT is planned by January 2023 9th PSS (20.07.2021): NTECL informed that PSS tuning/SRT is planned during August 2021. SRT may be conducted at a higher step in the future. Test may be conducted at full load and reduced loading.
	3	500	10-10-23		15th PSS (23-05-2025): The detailed final report for NTECL Units 2 and 3 including PSSE model/exciter/Generator/Governor data may be furnished for analysis. 14th PSS: Detailed final report may be submitted for analysis. 11th PSS (17-11-2022): NTECL mentioned that PSS tuning/SRT is planned by January 2023 9th PSS (20.07.2021): NTECL informed that PSS tuning/SRT is planned during December 2021.
RGCCPP-Kayamkulam	2 x 116.6 + 1x126.38			N	16th PSS (13-07-2026): NTPC Kayamkulam representative stated that presently the units are under long preservation. 15th PSS (23-05-2025): NTPC representative mentioned that the units are under long preservation mode and generators are in off bar condition. PSS tuning was not carried out since commissioning.

				NTPC is suggested to take up the PSS tuning as per PSS tuning procedure of SR. 14th PSS: NTPC SRHQ informed that they will update the PSS tuning status wrt NTPC Kayamkulam 11th PSS (17-11-2022): NTPC is suggested to take up the PSS tuning/SRT
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i) NLCIL:

Station	Status of PSS tuning				Observations / Comments
	Unit	MW	Previous Date of Tuning	Due date	
TPS-II Stage I&II	1	210	27-06-26	27-06-31	16th PSS (13-07-2026): Unit 1: All tests as per PSS tuning procedure are not carried out. Simulation studies not furnished. The following data may be furnished wrt report: Exciter model parameters, SMIB equivalent model with .dyr file, PSS/E model data for Governor may be shared. Unit 3: All tests as per PSS tuning procedure are not carried out. Simulation studies not furnished. The following data may be furnished wrt report: Damping calculation, Exciter model parameters, SMIB equivalent model with .dyr file, PSS/E model data for Governor may be shared. 15th PSS (23-05-2025): Unit 1: NLCIL TPS-II representative informed that AVR upgradation works for Unit-1 are planned during the Annual Overhaul (AOH) in the financial year 2025–26. Subsequently, PSS tuning will be taken up. 15th PSS (23-05-2025): Unit 2: Lesser PSS effectiveness during -ve step may be clarified by NLCIL after discussing with OEM. AVR model parameters to be submitted by NLCIL. PSS/E model data for Governor and generator to be submitted by NLCIL. Simulation studies/Other tests are not carried
	2	210	14-11-24	14-11-29	
	3	210	21-04-26	21-04-31	

				out by NLCIL TPS-II Unit 2 as per the PSS tuning procedure. Technical reasons for the same may be furnished by NLCIL TPS-II Unit 2. 14th PSS: NLCIL TPS II representative mentioned AVR controller upgradation is going on in NLCIL TPS-II Stage- I units. Presently Unit 2 AVR upgradation is in commissioning stage, after completion, PSS tuning is planned. Unit 1 PSS tuning is planned after its AVR upgradation during AOH 12thPSS(26-05-2023): NLCIL mentioned AVR/excitation system Upgradation works for all the 3 Stage –I units are planned. By May 2024 PSS tuning for all Stage –I units will be completed. 11th PSS (17-11-2022): NLCIL TPS-II mentioned that AVR/excitation system upgradation works are planned for Stage I units (Units 1,2 & 3). After the completion of works PSS tuning will be carried out in 2023.
4	210	17-06-21	17-06-26	16th PSS (13-07-2026): Unit 4: NLCIL TPS-II representative stated that the AVR controller upgradation for Unit-4 is still pending. It was informed that the AVR controller upgradation will be completed during the planned Overhaul (OH) scheduled for this year, following which PSS tuning will also be carried out. Unit 5: NLCIL stated that excitation system was replaced. This was clubbed with unit OH. All tests as per PSS tuning procedure are not carried out. Simulation studies not furnished. The following data may be furnished wrt report: Generator datasheet, Exciter model parameters, SMIB equivalent model with .dyr file, PSS/E model data for Governor may be shared. Units 6 and 7: All tests as per PSS tuning procedure are not carried out. Simulation studies not furnished. The following data may be furnished wrt report: Generator datasheet, Exciter model parameters, SMIB equivalent model with .dyr file, PSS/E model data for Governor

				may be shared. 15th PSS (23-05-2025): NLCIL TPS-II representative mentioned that order for AVR controller upgradation is placed. Drawing approval is under process. Panel erection would be started from last quarter of this FY in a phased manner during unit OH. 14th PSS: NLCIL TPS-II mentioned that AVR controller upgradation is planned in NLCIL TPS-II Stage- II units. It is in tendering stage. 11th PSS (17-11-2022): No conclusion can be made from the submitted plots. NLCIL TS-II to submit all the plots with data sheets and calculation for analysis. 10th PSS (28.04.2022): NLCIL informed that PSS tuning was carried out for all Stage II units (U4 to U7) in May 2021. Reports will be furnished.
	5	210	13-02-26	13-02-31
	6	210	10-01-26	10-01-31
	7	210	21-02-26	21-02-26
TPS-I Exp	1	210	12-10-15	12-10-20 16th PSS (13-07-2026): NLCIL TPS-I Exp representative stated retrofitting of excitation system and PSS tuning of both units is targeted by next year end/2028. 11th PSS (17-11-2022): NLCIL TPS-I Exp mentioned that PSS tuning will be carried out at the earliest and also replacement of excitation system works for both the units will be taken up. 9th PSS (20.07.2021): NLCIL informed that PSS tuning/SRT is planned to be carried out by December 2021 for units 1 and 2
	2	210	05-11-15	05-11-20
TPS-II Exp	1	250	19-04-17	19-04-22 16th PSS (13-07-2026): NLCIL TPS-II Exp representative stated that retendering of contract is under process. PSS tuning is tentatively expected to be carried out for both the units before December 2026 end after unit 2 boiler modification works.
	2	250	19-04-17	19-04-22 15th PSS (23-05-2025): The NLCIL representative mentioned that PSS tuning for Unit 1 is planned to be carried

					out within the next three months. PSS tuning for Unit 2 would be taken after the boiler side modifications are completed. 14th PSS: NLCIL mentioned that tender was floated and will be awarded shortly. OEM is BHEL. PSS tuning is planned after the AOH. 11th PSS (17-11-2022): NLCIL TPS-II Exp mentioned that PSS tuning will be carried out by March 2023. 9th PSS (20.07.2021): NLCIL informed that PSS tuning/SRT is planned to be carried out by December 2021 for units 1 & 2
NNTPS	1	500	03-12-21	03-12-26	14th PSS: NNTPS mentioned that they are pursuing with OEM to get the data. 12th PSS (26-05-2023): Generator Datasheet, PSS model with the Excitation system data to be furnished No. of real power oscillations with PSS ON and OFF are same.
	2	500	21-09-21	21-09-26	14th PSS: NNTPS mentioned that they are pursuing with OEM to get the data. 11th PSS (17-11-2022): NNTPS mentioned that clarification on damping torque calculated will be furnished. 10th PSS (28.04.2022): Clearer plots with proper legend may be submitted with the present data. Damping torque calculation to be checked.
NTPL	1	500	04/05-01-23	04/05-01-28	16th PSS (13-07-2026): NLCIL TPS-II Exp representative stated that all the periodic tests (5 Nos.) as mentioned in IEGC are planned to be carried out by March 2027. 15th PSS (23-05-2025): NTPL representative mentioned that the reports were discussed with the OEM. The OEM responded that the value of ΔD is approximately 10 for some steps and less than 10 for others. The OEM clarified that such behavior is typical for a brushless excitation system. Additionally, based on the PSS output waveforms, the OEM confirmed that the PSS is effective. NTPL also mentioned that, during discussions regarding the next phase of PSS retuning, the OEM indicated they are not yet ready with the necessary software to carry out simulation studies.

					NTPL may furnish modified plots using the recorded data after consulting with the OEM, as the PSS tuning/SRT results were found not effective. 12th PSS (26-05-2023): PSS tuning/SRT is not effective. Modified plots with recorded data may be furnished after consulting with OEM
	2	500	04/05-01-23	04/05-01-28	16th PSS (13-07-2026): NLCIL TPS-II Exp representative stated that all the periodic tests (5 Nos.) as mentioned in IEGC are planned to be carried out by March 2027. 15th PSS (23-05-2025): NTPL representative mentioned that the reports were discussed with the OEM. The OEM responded that the value of ΔD is approximately 10 for some steps and less than 10 for others. The OEM clarified that such behavior is typical for a brushless excitation system. Additionally, based on the PSS output waveforms, the OEM confirmed that the PSS is effective. NTPL also mentioned that, during discussions regarding the next phase of PSS retuning, the OEM indicated they are not yet ready with the necessary software to carry out simulation studies. NTPL may furnish modified plots using the recorded data after consulting with the OEM, as the PSS tuning/SRT results were found not effective. 12th PSS (26-05-2023): PSS tuning/SRT is not effective. Modified plots with recorded data may be furnished after consulting with OEM

j) NPCIL:

Station	Status of PSS tuning				Observations / Comments
	Unit	MW	Previous Date of Tuning	Due date	
KGS	1	220	04-10-23	04-10-28	14th PSS: All tests as per PSS tuning procedure are not carried out. Simulation studies not furnished. SRT to be carried out at 2 different steps at 2

					different loads in the future. PSS/E model data for Governor and generator to be furnished. 12th PSS (26-05-2023): PSS tuning for Unit 1 is planned before the planned BSD in Sep23/Oct23. 11th PSS (17-11-2022): KGS mentioned that PSS tuning will be carried out by September 2023.
	2	220	02-01-25	02-01-30	15th PSS (23-05-2025): KAIGA may plan SRT with higher step of 5 % in the future. SRT is not effective at lower step of 1% as ΔD is less than 10. KAIGA to clarify in this regard after discussing with OEM. PSS/E model data for Governor and generator may be shared. Simulation studies/Other tests are not carried out by KAIGA as per the PSS tuning procedure. Technical reasons for the same may be furnished by KAIGA. 14th PSS: KAIGA GS representative mentioned that PSS tuning for Unit 2 is planned before BSD in October 2024. 12th PSS (26-05-2023): PSS tuning for Unit 2 is planned during in July24/Aug24. 11th PSS (17-11-2022): KGS mentioned that Turbine vibration issues are there. PSS tuning is planned tentatively carried out in 2024.
	3	220	14-06-23	14-06-28	13th PSS (19-10-2023): PSS/E model data for PSS (Model name) & Governor data to be furnished. Damping calculation to be furnished by considering T_d at PSS On and PSS OFF at the same location on plot.
	4	220	04-08-23	04-08-28	13th PSS (19-10-2023): PSS/E model data for PSS (Model name) & Governor data to be furnished. SRT to be carried out at two different steps in the future Damping calculation to be furnished by considering T_d at PSS On and PSS OFF at the same location on plot.
MAPS	1	220	11-01-06	11-01-11	14th PSS: MAPS informed that PSS tuning is planned

					after unit revival in the next year. 8th PSS (20.04.2021): MAPS had informed that presently the unit is in project mode. PSS tuning/SRT will be done during startup.
	2	220	20-11-18	20-11-23	14th PSS: MAPS informed that PSS tuning is planned in October 2024 during short Shutdown. 8th PSS (20.04.2021): Remaining PSS OFF plots to be furnished for comparison The reasons for oscillations in active power may be furnished The Generator, Exciter, Governor and Stabilizer Model along with final settings to be provided along with damping torque calculation
KKNPP	1	1000	Sep 22	Sep 27	16th PSS (13-07-2026): KKNPP representative stated depending on the analysis/feedback wrt Unit 2 PSS report submitted for the meeting, PSS tuning of Unit 1 would be planned during the next opportunity. 14th PSS: KKNPP mentioned that they are pursuing with OEM to get the data. 13th PSS (19-10-2023): Revised report with appropriate scale to be furnished. SRT to be carried out at two different steps in the future at two different loadings. Generator, AVR, Governor and PSS parameters to be furnished. Corresponding PSS/E model for Exciter, Governor, Generator & PSS to be furnished.
	2	1000	14-01-26	14-01-26	16th PSS (13-07-2026): <u>Units 6 and 7:</u> All tests as per PSS tuning procedure are not carried out. Simulation studies not furnished. The following data may be furnished wrt report: Higher step change may be considered in testing by KKNPP the future. PSS/E model data for governor and generator, AVR and PSS parameters, SMIB equivalent model with .dyr file. 15th PSS (23-05-2025): KKNPP representative mentioned that PSS tuning for Unit 2 is planned in October 2025. 14th PSS: KKNPP mentioned that they are pursuing with

					OEM to get the data. 13th PSS (19-10-2023): Revised report with appropriate scale to be furnished. SRT to be carried out at two different steps in the future at two different loadings. Generator, AVR, Governor and PSS parameters to be furnished. Corresponding PSS/E model for Exciter, Governor, Generator & PSS to be furnished.
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k) ISTS Connected IPPs

Station	Status of PSS tuning				Observations / Comments
	Unit	MW	Previous Date of Tuning	Due date	
SEIL P-I	1	660	28/29-04-26	28/29-04-31	16th PSS (13-07-2026): All tests as per PSS tuning procedure are not carried out. Simulation studies not furnished. The following data may be furnished wrt report: PSS/E model data for Governor and generator, AVR parameters in standard IEEE/PSSE, SMIB equivalent model with .dyr file 12th PSS (26-05-2023): Revised reports with appropriate scale along with damping calculations, PSS model to be furnished.
	2	660	28/29-04-26	28/29-04-31	16th PSS (13-07-2026): All tests as per PSS tuning procedure are not carried out. Simulation studies not furnished. The following data may be furnished wrt report: PSS/E model data for Governor and generator, AVR parameters in standard IEEE/PSSE, SMIB equivalent model with .dyr file 12th PSS (26-05-2023): Revised reports with appropriate scale along with damping calculations, PSS model to be furnished.

SEIL P-II	1	660	02/03-08-22	03-08-27	12th PSS (26-05-2023)/ 11th PSS (17-11-2022): Jeq, M, H values with units along with damping torque calculation details to be furnished for both the units.
	2	660	02/03-08-22	03-08-27	10th PSS (28.04.2022): SEIL informed that PSS tuning is planned by November 2022.
MPGL (Formerly CEPL)	1	600	17-07-18	17-07-23	16th PSS (13-07-2026): MPGL representative stated that PSS tuning for Unit 1 is planned to be carried out by July 2026. 15th PSS (23-05-2025): Adani PL representative mentioned that PSS tuning is planned in July/August 2025. 10th PSS (28.04.2022): CEPL informed that PSS tuning is planned by August 2022. The damping torque calculation needs to be furnished
	2	600	12-06-23	12-06-28	13th PSS (19-10-2023): Constant values (T_6 , T_R), AVR, Governor parameters and final implemented settings to be furnished.
IL&FS	1	600	23-12-22	23-12-27	12th PSS (26-05-2023): PSS model details and transfer function to be furnished.
	2	600	17-05-23	17-05-28	13th PSS (19-10-2023): PSS tuning to be carried out at two different loadings in future. Constant values (T_6 , T_R), Final implemented settings to be furnished.
Lanco Stage II	1*233 + 1*133		N		15th PSS (23-05-2025): Lanco Stage II is suggested to take up PSS tuning at the earliest as per the PSS tuning procedure of SR.
SEL	1	150	31-03-26/ 01-04-26	31-03-31/ 01-04-31	16th PSS (13-07-2026): All tests as per PSS tuning procedure are not carried out. Simulation studies not furnished PSS/E model data for Governor may be furnished. 14th PSS: SEL representative informed that the PSS tuning for Units 3 and 4 was carried out in July 2024. Final reports will be furnished. PSS

					tuning for Units 1 and 2 is planned to completed by December 2024
	2	150	20-04-26	20-04-31	16th PSS (13-07-2026): All tests as per PSS tuning procedure are not carried out. Simulation studies not furnished PSS/E model data for Governor may be furnished.
	3	150	01-04-26	01-04-31	16th PSS (13-07-2026): All tests as per PSS tuning procedure are not carried out. Simulation studies not furnished PSS/E model data for Governor may be furnished.
	4	150	21-04-26	21-04-31	16th PSS (13-07-2026): All tests as per PSS tuning procedure are not carried out. Simulation studies not furnished PSS/E model data for Governor may be furnished.
MEL	1&2	2 * 150	N		15th PSS (23-05-2025): MEL representative informed that PSS tuning is planned for Unit 1 in last week of May 2025. 7th PSS: MEL had informed vide mail that PSS tuning schedule for the 2 units would be intimated once the units are operational.
	3&4	2 * 350	N		15th PSS (23-05-2025): MEL representative mentioned that PSS tuning for unit 3 was carried out on 15.03.2025. Reports will be furnished.

List of Participants for the 16th PSS Tuning meeting held on 13.07.2026 through VC			
Sl.No	Name	Designation	Organization
1	J Maruthi Prasad	Dy.EE/MRT/STAGE-IV/Dr.MVR RTPP	APGENCO
2	B Suvarna Raju	DyEE	APGENCO
3	G Laxmi Prasad	ADE	TGGENCO
4	Srinivasamurthy G V	SE(E)	KPCL
5	Ravi Kumar S	EE(E)	KPCL
6	Srinivas H N	AEE(E)	KPCL
7	Jaya Krishna R	AEE(E)	KPCL
8	Shreekantrao	EE(E)	KPCL/RTPS
9	Vijay Pujari	EE(E)	YTPS/KPCL
10	Shivakumara N D	EE (E)	BTPS, KPCL
11	Vijay Pujari	EE(E)	YTPS/KPCL
12	Rajshekhar	AEE(E)	YTPS/KPCL
13	N Ravichandran	SE/ES/MTPS-2	TNPGCL
14	S Sakuntala	SE/ES/TTPS	TNPGCL
15	K Veluswamy	EE/MRT/MTPS-1	TNPGCL
16	M Karunakaran	AEE/E/MRT/NCTPS-I	TNPGCL
17	Jagadeesh Vankudothu	ACM/Electrical	NLCIL TPS II
18	Guru Prakash	EE- EM- MRT	NLCIL, TPS2EXP
19	Boppana Chandrasekhar	DGM	NTPC KUDGI

20	Nagarjuna Reddy U	DEE/MRT	NNTPS,NLCIL
21	Sivaraman R	GM(Electrical)	ITPCL
22	G Harikrishna	AM/OS	SEIL
23	Ajith Kumar S	AE(E)	NCTPP-III
24	Sarath Kumar C	AE(E)	NCTPP-III
25	Indumathi N	AEE/E/MRT	NCTPP- STAGE-III
26	Raguvendra Singh Dewra	DGM	Adani Power Limited
27	T Srinivas	Executive Director	Grid India, SRLDC
28	Nadim Ahmad	GM	Grid India, SRLDC
29	M Pradeep Reddy	DGM	Grid India, SRLDC
30	T Madan Kumar	Dy. Mgr	Grid India, SRLDC
31	Asit Singh	Member Secretary	SRPC
32	Malini N S	Superintending Engineer (O, P & C)	SRPC
33	Ch Rajesh Kumar	Executive Engineer (O)	SRPC
34	Sriharsha M	Executive Engineer (O)	SRPC
35	Paul Daniel J	Assistant Engineer (O)	SRPC

16th PSS Meeting

13-07-2026

PSS Reports Guidelines

- The SRT to be carried out at two different machine loadings ranges
 - >80% Load and
 - 50-60% load
- Both step up and step down tests to be carried out (2% to 5%).
- Step up to be followed by Step down with a time gap of 20 sec, if taken up, simultaneously.
- During the Step Response Test, in case of more than one machine at a particular generating station, the PSS of non-tested machines may be kept out of service to see the effectiveness of PSS under test.
- Testing may be carried out in both the channels.
- The Generator + Excitation system + PSS + Governor in standard IEEE format models used for benchmarking/Simulation study to be provided
- Additional test brushless/static etc. machine's if required :
 - ✓ Tripping of any transmission line connected to the generating station may be done to simulate the effect of change in Vref.
 - ✓ During this test, if possible the PSS at other machines (if any) may be kept off.
- Make, Model , transfer function - IEEE equivalent models along-with the final Implemented settings of
 - i. Generator
 - ii. Excitation system
 - iii. PSS
 - iv. Governor
- **Real (Active) Power Scale to be within 10 % of operating point in the graphs.** Proper Graphs (soft copy) with visible scale to be provided.

1.20. GENROU

Round Rotor Generator Model (Quadratic Saturation)

CONs	Value	Description
J		$T'_{do} (>0)$ (sec)
J+1		$T''_{do} (>0)$ (sec)
J+2		$T'_{qo} (>0)$ (sec)
J+3		$T''_{qo} (>0)$ (sec)
J+4		H, Inertia
J+5		D, Speed damping
J+6		X_d
J+7		X_q
J+8		X'_d
J+9		X'_q
J+10		$X''_d = X''_q$
J+11		X_l
J+12		S(1.0)
J+13		S(1.2)

Note: X_d , X_q , X'_d , X'_q , X''_d , X''_q , X_l , H, and D are in pu, machine MVA base.

X''_q must be equal to X''_d .

1.22. GENSAL

Salient Pole Generator Model (Quadratic Saturation on d-Axis)

CONs	Value	Description
J		$T'_{do} (>0)$ (sec)
J+1		$T''_{do} (>0)$ (sec)
J+2		$T'_{qo} (>0)$ (sec)
J+3		H, Inertia
J+4		D, Speed damping
J+5		X_d
J+6		X_q
J+7		X'_d
J+8		$X''_d = X''_q$
J+9		X_l
J+10		S(1.0)
J+11		S(1.2)

Note: X_d , X_q , X'_d , X''_d , X''_q , X_l , H, and D are in pu, machine MVA base.

X''_q must be equal to X''_d .

Generator Datasheet – GENROU & GENSAL

Round Rotor Generator Model (Exponential Saturation)

CONs	Value	Description
J		$T'_{do} (>0)$ (sec)
J+1		$T''_{do} (>0)$ (sec)
J+2		$T'_{qo} (>0)$ (sec)
J+3		$T''_{qo} (>0)$ (sec)
J+4		H, Inertia
J+5		D, Speed damping
J+6		X_d
J+7		X_q
J+8		X'_d
J+9		X'_q
J+10		$X''_d = X''_q$
J+11		X_l
J+12		S(1.0)
J+13		S(1.2)

Model GENROE for machine at bus 442047 'T1'

Model CONS Model ICONS Model VARS

	Con Value	Con Description
1	7.0000	$T'_{do} (> 0)$
2	0.0400	$T''_{do} (> 0)$
3	2.5000	$T'_{qo} (> 0)$
4	0.2000	$T''_{qo} (> 0)$
5	4.2110	H, Inertia
6	0.0000	D, Speed Damping
7	2.2250	X_d
8	2.1100	X_q
9	0.2660	X'_d
10	0.4800	X'_q
11	0.2140	$X''_d = X''_q$
12	0.1790	X_l
13	0.0660	S(1.0)
14	0.2600	S(1.2)

Excitation System

- Static Excitation System
- DC Excitation System
- AC Excitation System

Model	Description
AC1C	IEEE AC1C excitation system model
AC2C	IEEE AC2C excitation system model
AC3C	IEEE AC3C excitation system model
AC4C	IEEE AC4C excitation system model
AC5C	IEEE AC5C excitation system model
AC6A	IEEE AC6A excitation system model
AC6C	IEEE AC6C excitation system model
AC6CU2	Modified AC6CU2 Excitation System Model
AC7B	IEEE 421.5 2005 AC7B excitation system
AC7CU1	IEEE 421.5 2016 AC7CU1 excitation system
AC8B	IEEE 421.5 2005 AC8B excitation system
AC8BBU2	Basler DECS-250 Excitation System
AC8CU1	IEEE 421.5 2016 AC8CU1 excitation system
AC8CU1	IEEE 421.5 2016 AC8CU1 excitation system
AC9CU1	IEEE 421.5 2016 AC9CU1 excitation system
AC11CU1	IEEE 421.5 2016 AC11CU1 excitation system
BBSEX1	Brown-Boveri static excitation system model
BUDCZT	Czech proportional/integral excitation system model
CELIN	ELIN brushless excitation system model
DC1C	IEEE DC1C excitation system model
DC2C	IEEE DC2C excitation system model
DC3A	IEEE 421.5 2005 DC3A excitation system
DC4B	IEEE 421.5 2005 DC4B excitation system
DC4CU1	IEEE 421.5 2016 DC4CU1 excitation system
EMAC1T	AEP Rockport excitation system model
ESAC1A	1992 IEEE type AC1A excitation system model
ESAC2A	1992 IEEE type AC2A excitation system model
ESAC3A	1992 IEEE type AC3A excitation system model
ESAC4A	1992 IEEE type AC4A excitation system model
ESAC5A	1992 IEEE type AC5A excitation system model
ESAC6A	1992 IEEE type AC6A excitation system model
ESAC8B	Basler DECS model
ESDC1A	1992 IEEE type DC1A excitation system model

Model	Description
ESDC2A	1992 IEEE type DC2A excitation system model
ESST1A	1992 IEEE type ST1A excitation system model
ESST2A	1992 IEEE type ST2A excitation system model
ESST3A	1992 IEEE type ST3A excitation system model
ESST4B	IEEE type ST4B potential or compounded source-controlled rectifier exciter
ESURRY	Modified IEEE Type AC1A excitation model
EX2000	EX2000 Excitation System
EXAC1	1981 IEEE type AC1 excitation system model
EXAC1A	Modified type AC1 excitation system model
EXAC2	1981 IEEE type AC2 excitation system model
EXAC3	1981 IEEE type AC3 excitation system model
EXAC4	1981 IEEE type AC4 excitation system model
EXBAS	Basler static voltage regulator feeding dc or ac rotating exciter model
EXDC2	1981 IEEE type DC2 excitation system model
EXELI	Static PI transformer fed excitation system model
EXNEBB	Bus or solid fed SCR bridge excitation system model type NEBB (NVE)
EXNI	Bus or solid fed SCR bridge excitation system model type NI (NVE)
EXPIC1	Proportional/integral excitation system model
EXST1	1981 IEEE type ST1 excitation system model
EXST2	1981 IEEE type ST2 excitation system model
EXST2A	Modified 1981 IEEE type ST2 excitation system model
EXST3	1981 IEEE type ST3 excitation system model
IEEET1	1968 IEEE type 1 excitation system model
IEEET2	1968 IEEE type 2 excitation system model
IEEET3	1968 IEEE type 3 excitation system model
IEEET4	1968 IEEE type 4 excitation system model
IEEET5	Modified 1968 IEEE type 4 excitation system model
IEEEX1	1979 IEEE type 1 excitation system model and 1981 IEEE type DC1 model
IEEEX2	1979 IEEE type 2 excitation system model
IEEEX3	1979 IEEE type 3 excitation system model
IEEEX4	1979 IEEE type 4 excitation system, 1981 IEEE type DC3 and 1992 IEEE type DC3A models
IEET1A	Modified 1968 IEEE type 1 excitation system model
IEET1B	Modified 1968 IEEE type 1 excitation system model
IEET5A	Modified 1968 IEEE type 4 excitation system model
IEEX2A	1979 IEEE type 2A excitation system model
IVOEX	IVO excitation system model
OEX12T	Ontario Hydro IEEE Type ST1 excitation system with continuous and bang bang terminal voltage limiter
OEX3T	Ontario Hydro IEEE Type ST1 excitation system with semicontinuous and acting terminal voltage limiter

Model	Description
REXSY1	General purpose rotating excitation system model
REXSYS	General purpose rotating excitation system model
SCRX	Bus or solid fed SCR bridge excitation system model
SEXS	Simplified excitation system model
ST1C	IEEE ST1C excitation system model
ST4CU1	IEEE ST4CU1 excitation system model
ST5B	IEEE 421.5 2005 ST5B excitation system
ST5C	IEEE ST5C excitation system model
ST7C	IEEE ST7C excitation system model
ST6B	IEEE 421.5 2005 ST6B excitation system
ST6CU1	IEEE 421.5 2016 ST6CU1 excitation system
ST7B	IEEE 421.5 2005 ST7B excitation system
ST8CU1	IEEE 421.5 2016 ST8CU1 excitation system
ST9CU1	IEEE 421.5 2016 ST9CU1 excitation system
ST10CU1	IEEE 421.5 2016 ST10CU1 excitation system
URHIDT	High dam excitation system model
URST5T	IEEE proposed type ST5B excitation system

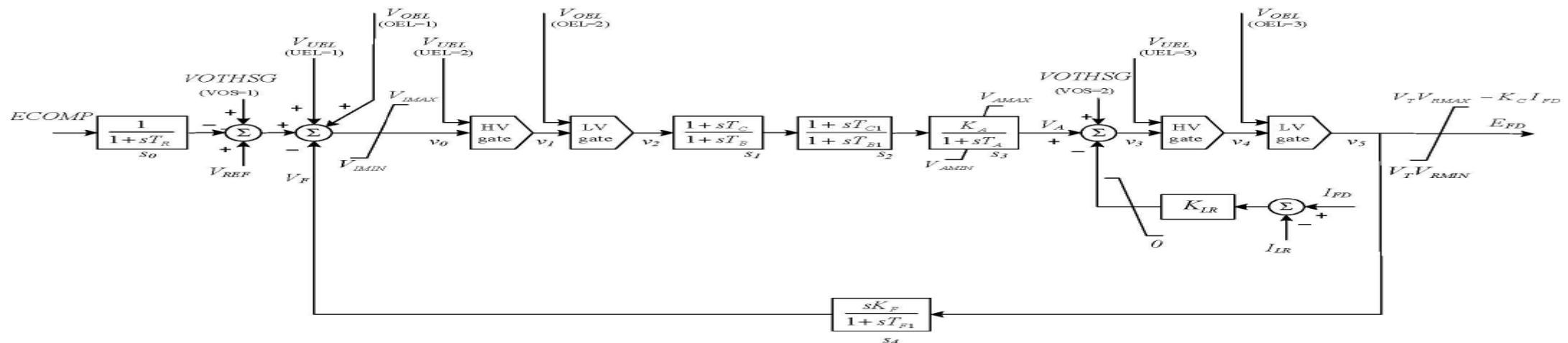
ST1C Excitation System

CONS	Value	Description
J		T_R (s), regulator input filter time constant
J+1		$V_{I\text{MAX}}$ (pu), maximum voltage error (regulator input)
J+2		$V_{I\text{MIN}}$ (pu), minimum voltage error (regulator input)
J+3		TC (s), lead time constant of 1st lead-lag block
J+4		TB (s), lag time constant of 1st lead-lag block
J+5		$TC1$ (s), lead time constant of 2nd lead-lag block
J+6		$TB1$ (s), lag time constant of 2nd lead-lag block
J+7		KA (pu), voltage regulator gain
J+8		TA (s), voltage regulator time constant
J+9		$V_{A\text{MAX}}$ (pu), maximum regulator output
J+10		$V_{A\text{MIN}}$ (pu), minimum regulator output
J+11		VR_{MAX} (pu), maximum exciter output
J+12		VR_{MIN} (pu), minimum exciter output
J+13		K_C (pu), rectifier loading factor proportional to commutating reactance
J+14		K_F (pu), rate feedback gain
J+15		TF (s), rate feedback time constant
J+16		K_{LR} (pu), exciter output current limiter gain
J+17		ILR (pu), exciter output current limit reference

Model ST1C for machine at bus 442087 'T4'

Model CONS Model ICONS Model VARS

	Con Value	Con Description
1	0.0200	T_R (sec)
2	99.0000	$V_{I\text{MAX}}$
3	-99.0000	$V_{I\text{MIN}}$
4	0.0250	TC (sec)
5	0.0250	TB (sec)
6	1.0000	$TC1$ (sec)
7	10.0000	$TB1$ (sec)
8	500.0000	KA
9	0.0040	TA (sec)
10	9.2300	$V_{A\text{MAX}}$
11	-9.2300	$V_{A\text{MIN}}$
12	9.2300	VR_{MAX}
13	-9.2300	VR_{MIN}
14	0.0745	K_C
15	0.0000	K_F
16	1.0000	$TF > 0$ (sec)
17	0.0000	K_{LR}
18	1.0000	ILR



PSS Model

This chapter contains a collection of data sheets for the stabilizer models contained in the PSS[®] E dynamics model library.

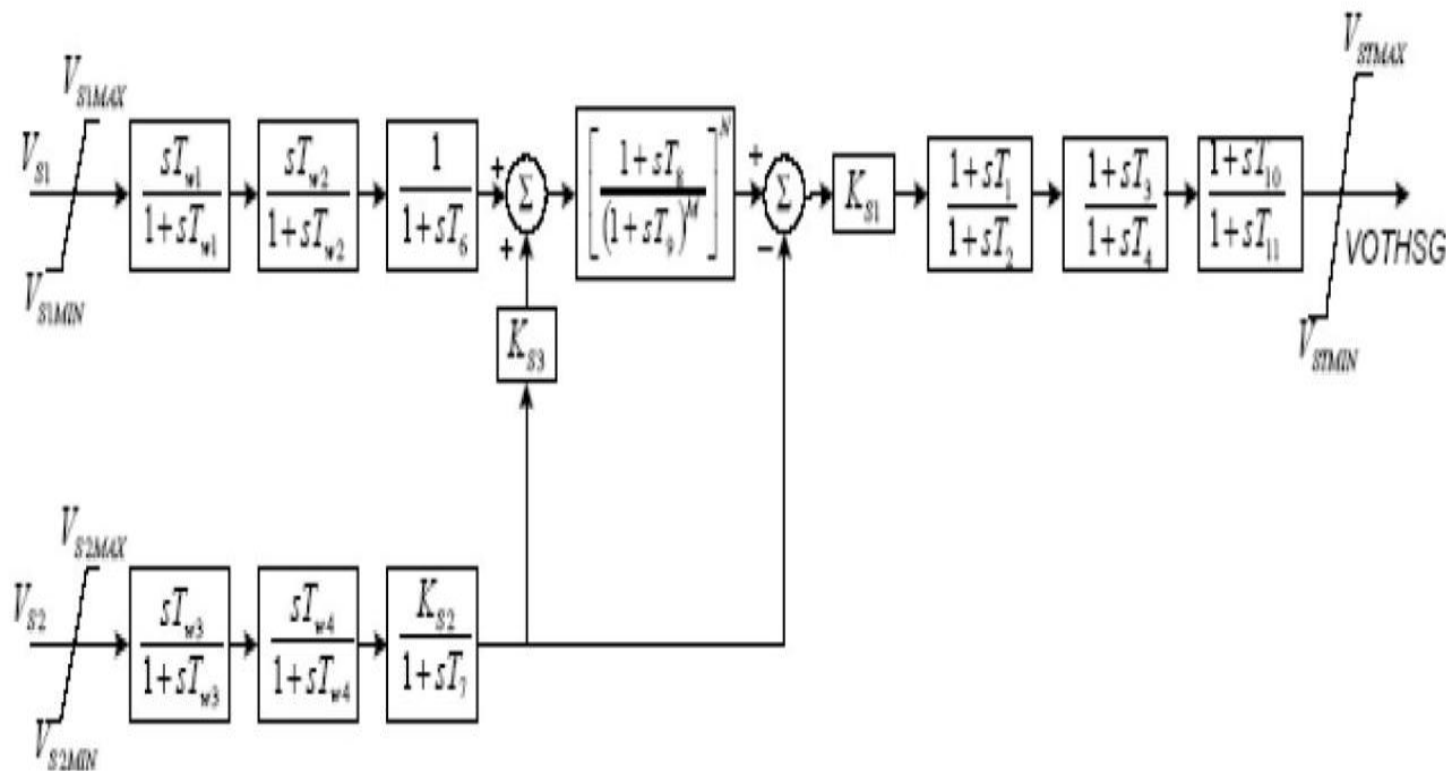
Model	Description
BEPST	Transient excitation boosting stabilizer model
IEE2ST	Dual-input signal power system stabilizer model
IEEEST	1981 IEEE power system stabilizer model
IVOST	IVO stabilizer model
OSTB2T	Ontario Hydro delta-omega power system stabilizer
OSTB5T	Ontario Hydro delta-omega power system stabilizer
PSS1A	IEEE Std. 421.5-2005 PSS1A Single-Input Stabilizer model
PSS2A	1992 IEEE type PSS2A dual-input signal stabilizer model
PSS2B	IEEE 421.5 2005 PSS2B IEEE dual-input stabilizer model
PSS2CU1	IEEE 421.5 2016 PSS2C IEEE dual-input stabilizer model
PSS3B	IEEE Std. 421.5 2005 PSS3B IEEE dual-input stabilizer model
PSS4B	IEEE 421.5(2005) dual-input stabilizer model
PSS6CU1	IEEE 421.5(2016) dual-input stabilizer model
PSS7CU1	IEEE 421.5(2016) dual-input stabilizer model
PTIST1	PTI microprocessor-based stabilizer model
PTIST3	PTI microprocessor-based stabilizer model
ST2CUT	Dual-input signal power system stabilizer model
STAB1	Speed sensitive stabilizer model
STAB2A	ASEA power sensitive stabilizer model
STAB3	Power sensitive stabilizer model
STAB4	Power sensitive stabilizer model
STABNI	Power sensitive stabilizer model type NI (NVE)
STBSVC	WECC supplementary signal for static var system
SYNAXBU1	Synchronous Condenser Auxiliary Control Model

PSS Model

Stabilizer Models

SIEMENS

PSS2B



Model PSS2B for machine at bus 442087 'T3'

Model CONS

Model ICONS

Model VARS

	Con Value	Con Description
1	4.0000	TW1 (>0) Washout Time constant - Signal 1
2	4.0000	TW2 Washout Time Constant - Signal 1
3	0.0000	T6 Lag Time Constant - Signal 1
4	4.0000	TW3 (>0) Washout Time Constant - Signal 2
5	0.0000	TW4 Washout Time Constant - Signal 2
6	4.0000	T7 Lag Time Constant - Signal 2
7	0.9500	KS2 Gain - Signal 2
8	1.0000	KS3 Gain - Signal 2
9	0.0000	T8 Ramp Tracking Filter Lead Time Constant
10	0.1000	T9 (>0) Ramp Tracking Filter Lag Time Constant
11	2.5000	KS1 Stabilizer Gain
12	0.3600	T1 Lead Time Constant - Phase Comp. Block 1
13	0.0400	T2 Lag Time Constant - Phase Comp. Block 1
14	0.6000	T3 Lead Time Constant - Phase Comp. Block 2
15	0.2800	T4 Lag Time Constant - Phase Comp. Block 2
16	1.0000	T10 Lead Time Constant - Phase Comp. Block 3
17	1.0000	T11 Lag Time Constant - Phase Comp. Block 3
18	0.9800	VS11MAX Stabilizer Input Maximum. Input 1
19	-0.9900	VS11MIN Stabilizer Input Minimum. Input 1
20	0.9800	VS12MAX Stabilizer Input Maximum. Input 2
21	-0.9900	VS12MIN Stabilizer Input Minimum. Input 2
22	0.1000	VSTMAX Stabilizer Output Maximum
23	-0.1000	VSTMIN Stabilizer Output Minimum

Governor Model

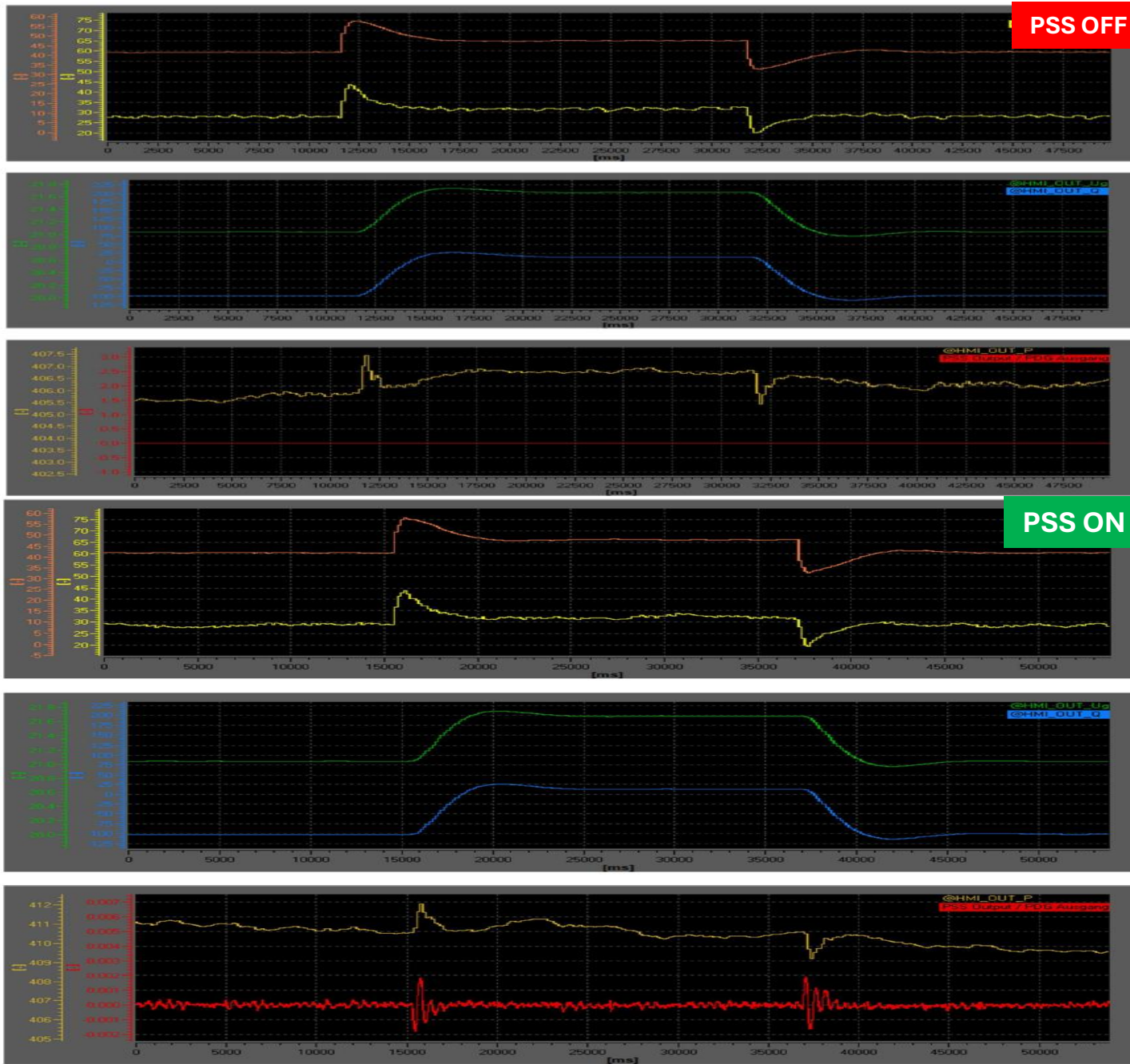
Model	Description
BBGOV1	Brown-Boveri turbine-governor model
BBGOV1	Brown-Boveri turbine-governor model
CRCMGV	Cross compound turbine-governor model
DEGOV	Woodward diesel governor model
DEGOV1	Woodward diesel governor model
DEGOV1DU	Woodward diesel governor model with speed deadband
GAST	Gas turbine-governor model
GAST2A	Gas turbine-governor model
GAST2ADU	Gas turbine model with speed deadband
GASTDU	Gas turbine-governor with speed deadband
GASTWD	Gas turbine-governor model
GASTWDDU	Woodward gas turbine-governor model with speed deadband
GGOV1	GE general purpose turbine-governor model
GGOV1DU	GE general governor/turbine model with speed deadband
GOVSTEAMEUU	Simplified Boiler and Steam Turbine with PID governor
HYGOV	Hydro turbine-governor model
HYGOVDU	Hydro turbine-governor model with speed deadband
HYGOV2	Hydro turbine-governor model
HYGOV2DU	HYdro turbine-governor model with speed deadband
HYGOVM	Hydro turbine-governor lumped parameter model
HYGOVR1	Fourth order lead-lag governor and hydro turbine
HYGOVT	Hydro turbine-governor traveling wave model
HYG3U1	WECC GP Governor, WECC G2 Governor plus Turbine Model
H6EU1	Hydro Turbine with American Governor Company Controller
IEEEG1	1981 IEEE type 1 turbine-governor model
IEEEG1SDU	IEEE type 1 speed-governing model with speed deadband
IEEEG2	1981 IEEE type 2 turbine-governor model
IEEEG3	1981 IEEE type 3 turbine-governor model
IEEEG3DU	IEEE type 3 speed-governing model with speed deadband
IEESGO	1973 IEEE standard turbine-governor model
IEESGODU	IEEE standard model with speed deadband
IVOGO	IVO turbine-governor model
PIDGOV	Hydro turbine and governor model

Model	Description
PIDGOVDU	Hydro turbine-governor model with speed deadband
PWTBD1	Pratt & Whitney Turboden turbine-governor Model
SGT8HMU1	Siemens SGT6-8000H Turbine Model (Multi Shaft)
SGT8HSU1	Siemens SGT6-8000H Turbine Model (Single Shaft)
SGT2EU1	Siemens SGT-2000E Turbine Model
SITGTU1	Siemens SGT-A65 Gas Turbine Model
SHAF25	Torsional-elastic shaft model for 25 masses
TGOV1	Steam turbine-governor model
TGOV1DU	Steam turbine-governor model with speed deadband
TGOV2	Steam turbine-governor model with fast valving
TGOV3	Modified IEEE type 1 turbine-governor model with fast valving
TGOV3DU	Modified IEEE type 1 speed-governing model with fast valving with speed deadband
TGOV4	Modified IEEE type 1 speed governing model with PLU and EVA
TGOV5	Modified IEEE type 1 turbine-governor model with boiler controls
TURCZT	Czech hydro or steam turbine-governor model
TWDM1T	Tail water depression hydro governor model 1
TWDM2T	Tail water depression hydro governor model 2
URCSCT	Combined cycle, single shaft turbine-governor model
URGS3T	WECC gas turbine governor model
WEHGOV	Woodward electronic hydro governor model
WESGOV	Westinghouse digital governor for gas turbine
WESGOVDU	Westinghouse digital governor for gas turbine model with speed deadband
WPIDHY	Woodward PID hydro governor model
WPIDHYDU	Woodward PID hydro governor model with speed deadband
WSHYDD	WECC double derivative hydro governor model
WSHYGP	WECC GP hydro governor plus turbine model
WSIEG1	WECC modified 1981 IEEE type 1 turbine-governor model

NTPC Ramagundam

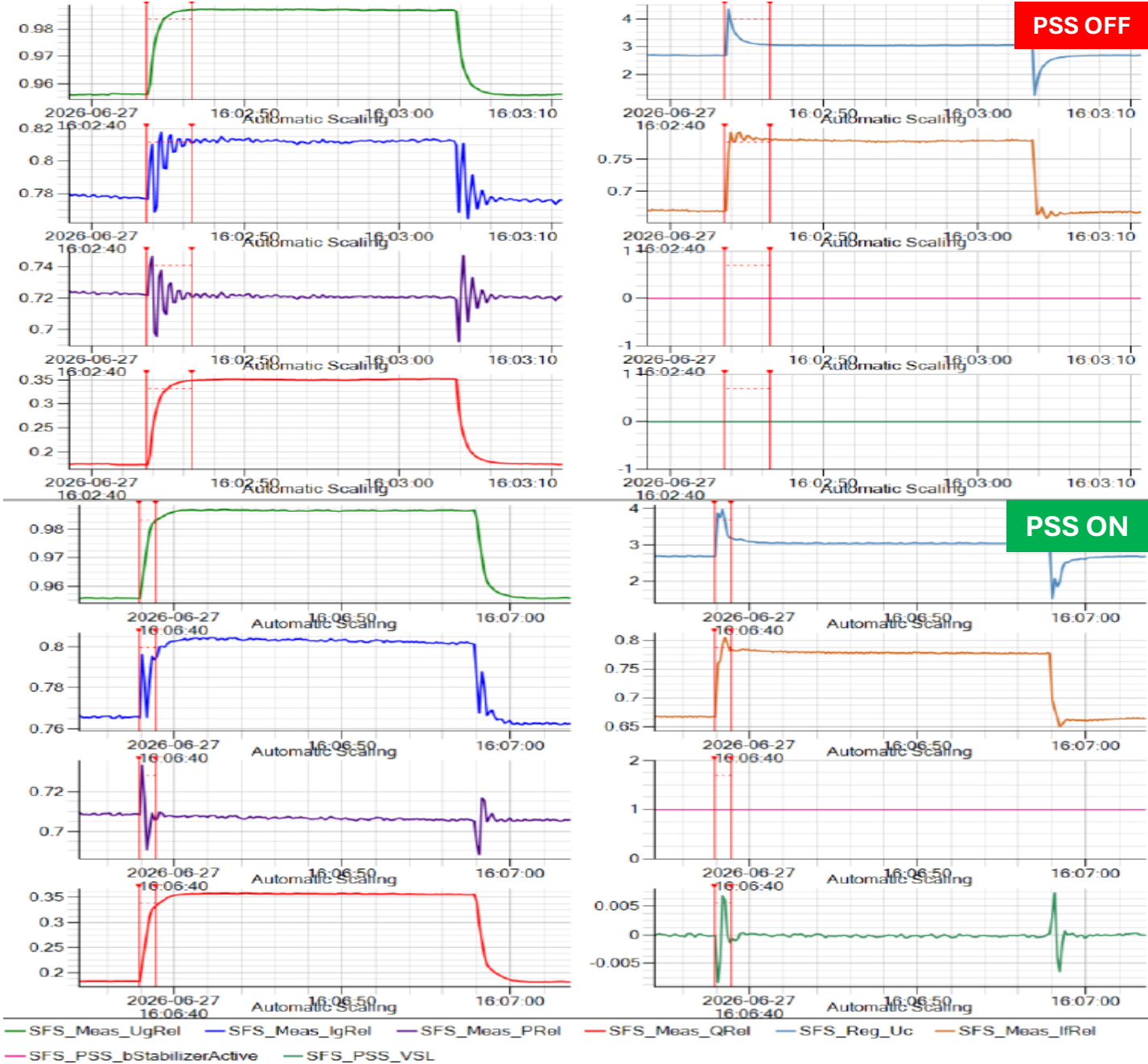
U4,U5,U6- 500 MW each

Date of Testing	30.12.2025
Exciter and PSS model	SIEMENS Brushless, PSS2B
SRT done at power levels	U4 – 280 MW and 445 MW U5 – 290 MW and 460 MW U4 – 285 MW and 430 MW All tests done in two channels with 1% and 3% step changes
Is PSS Effective?	No visible confirmation from the plots
Observations	- PSS2B equivalent parameters submitted - Damping calculation are not submitted - PSS/E model data for Governor and generator may be shared - AVR in standard IEEE/PSSE shall be shared - SMIB equivalent model with .dyr file shall be shared



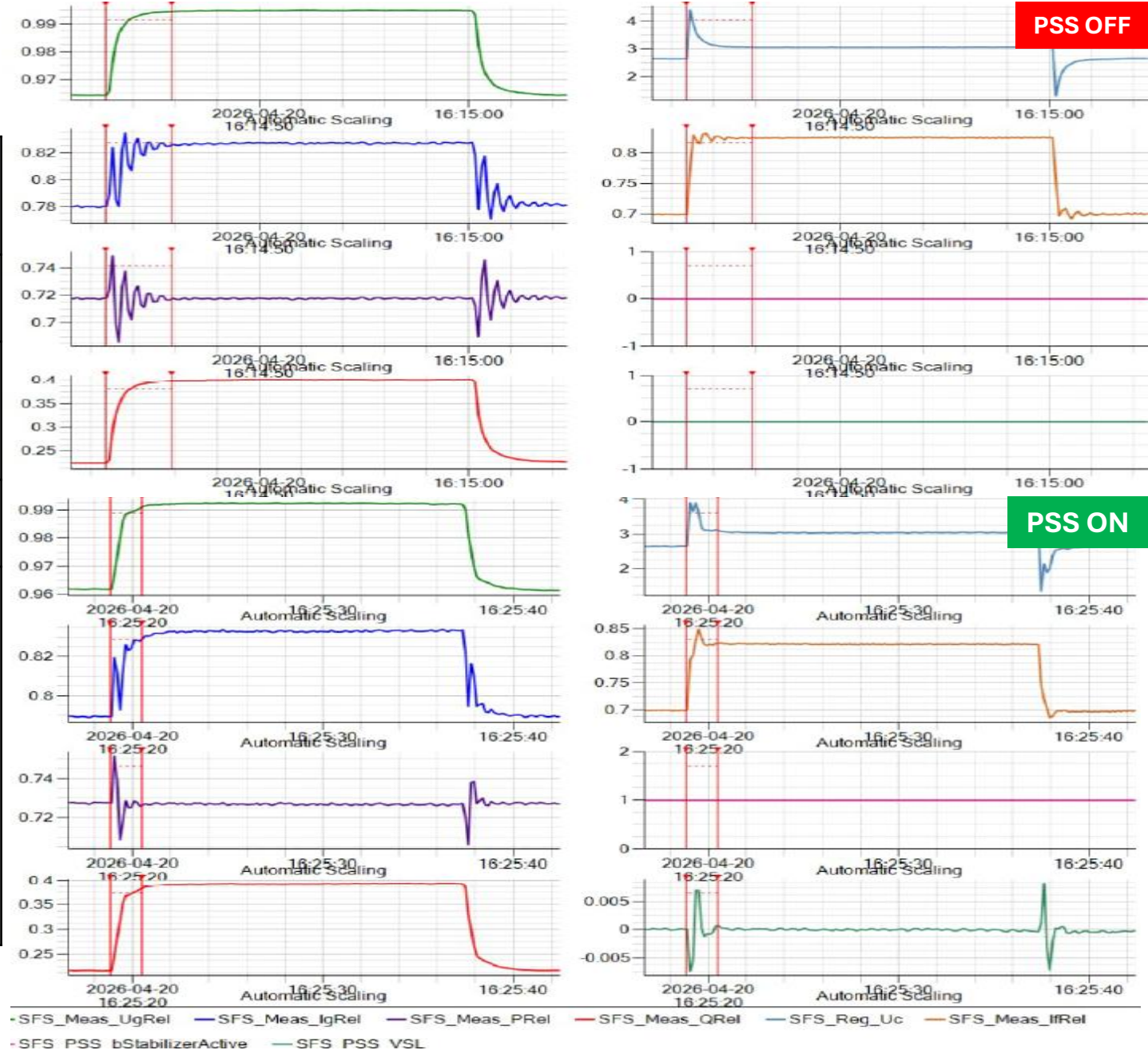
NLCIL ST2 – U1 – 210 MW

Date of Testing	27.06.2026
Exciter and PSS model	ABB Unitrol 6000, PSS2B
SRT done at power levels	+/- 2% and +/- 4% Step changes 135 MW and 175 MW in two channels
Is PSS Effective?	Effective
Observations	- Generator datasheet is submitted (except the saturation constants S 1.0 and S 1.2) - PSS 2B equivalent parameters submitted - Damping calculation are submitted - Exciter model parameters not submitted - SMIB equivalent model with .dyr file not shared - PSS/E model data for Governor may be shared



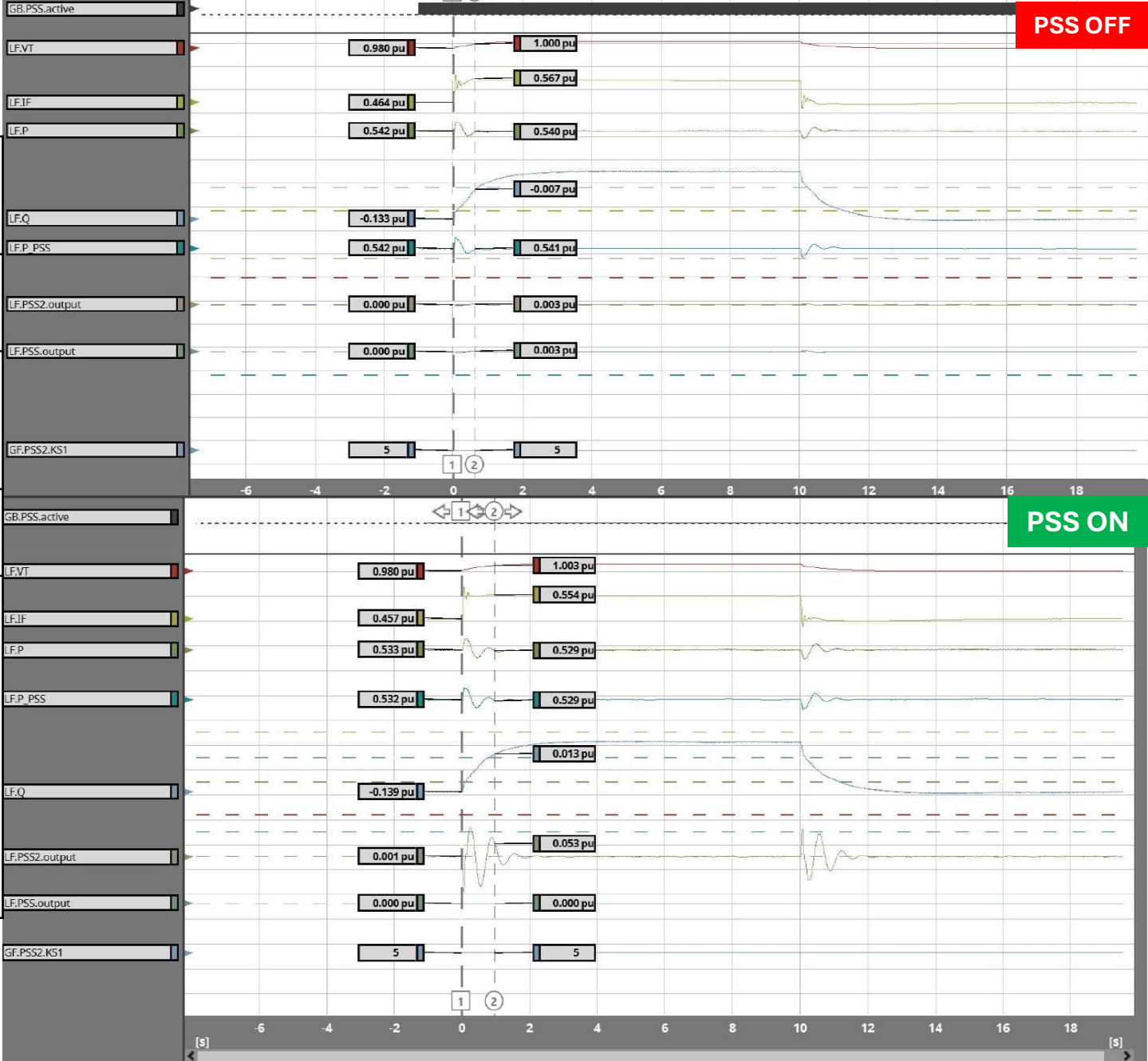
NLCIL ST2 – U3 – 210 MW

Date of Testing	21.04.2026
Exciter and PSS model	ABB Unitrol 6000, PSS2B
SRT done at power levels	+/- 2% and +/- 4% Step changes 140 MW and 180 MW in two channels
Is PSS Effective?	Visibly Effective
Observations	- Generator datasheet is submitted (except the saturation constants S 1.0 and S 1.2) - PSS 2B equivalent parameters submitted - Damping calculation are not submitted - Exciter model parameters not submitted - SMIB equivalent model with .dyr file not shared - PSS/E model data for Governor may be shared



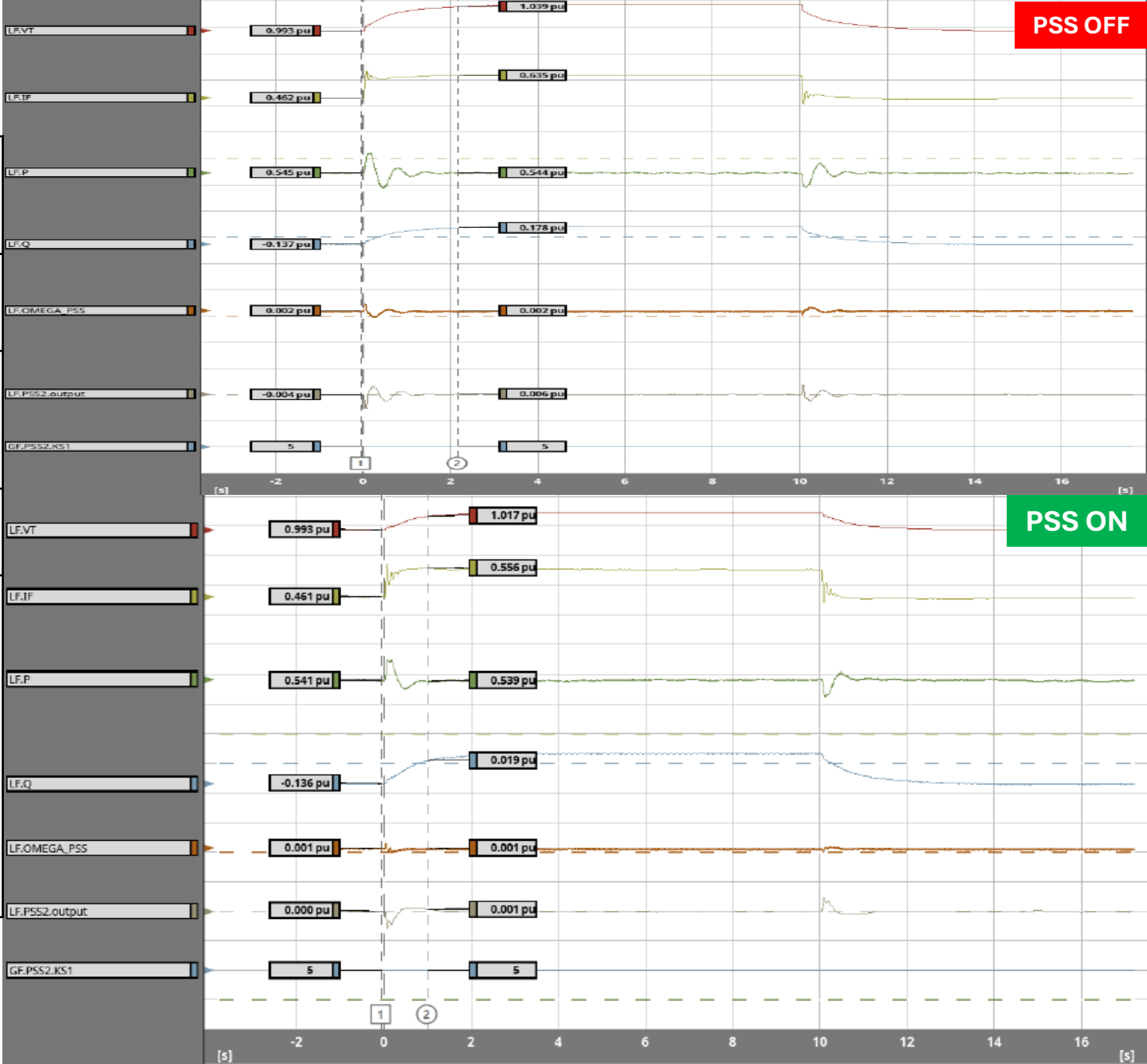
NLCIL ST2 – U5 – 210 MW

Date of Testing	28.03.2026
Exciter and PSS model	Andritz Hydro HIPASE Thyne 500, PSS2B
SRT done at power levels	+/- 3% and +/- 5% Step changes 130 MW and 170 MW in two channels
Is PSS Effective?	Effective
Observations	• PSS 2B equivalent parameters submitted • Damping calculation are submitted • Generator datasheet is not submitted • Exciter model parameters not submitted • SMIB equivalent model with .dyr file not shared • PSS/E model data for Governor may be shared



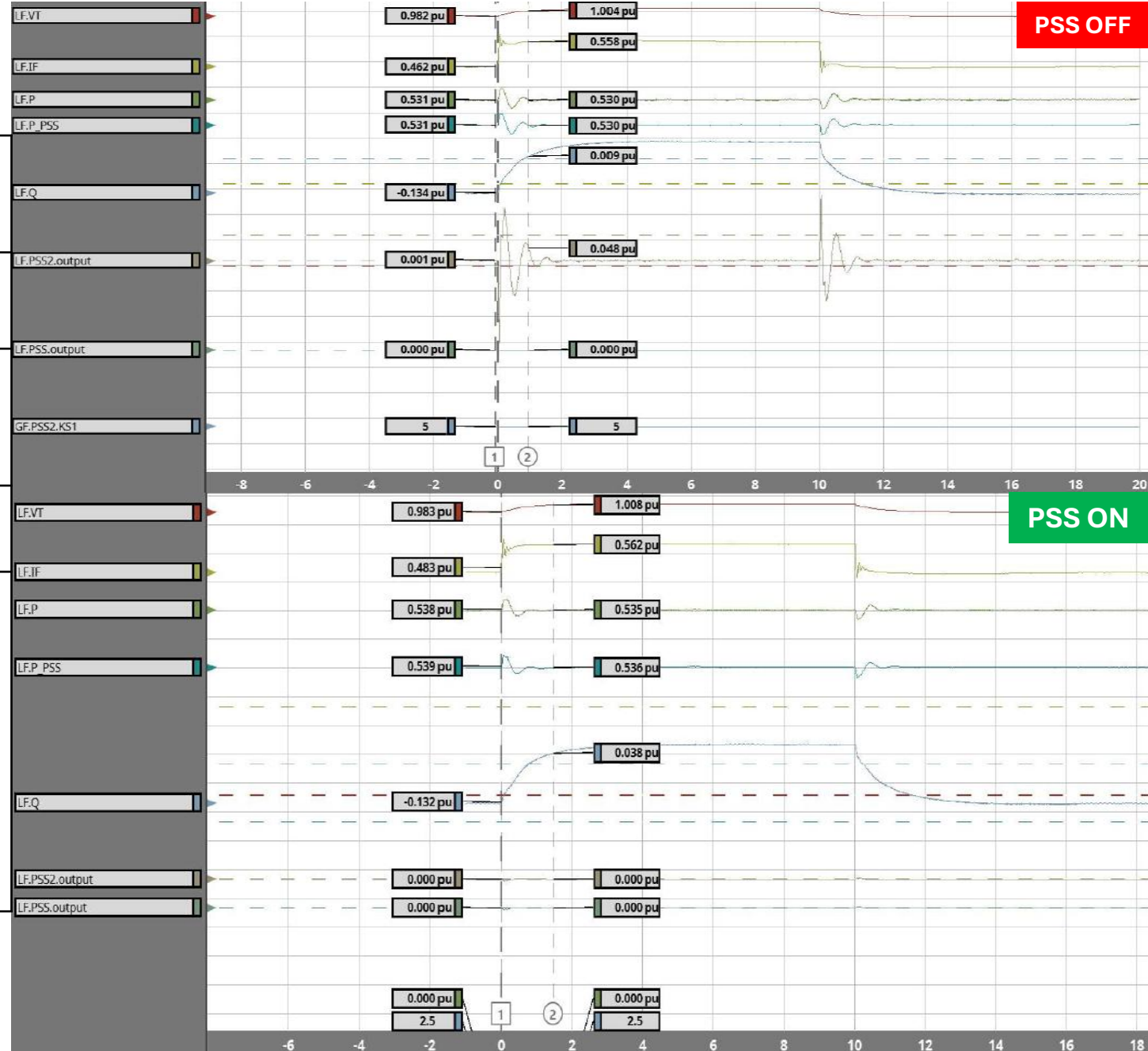
NLCIL ST2 – U6 – 210 MW

Date of Testing	10.01.2026
Exciter and PSS model	Andritz Hydro HIPASE Thyne 500, PSS2B
SRT done at power levels	+/- 3% and +/- 5% Step changes 60% and 80% load in two channels
Is PSS Effective?	Effective
Observations	• PSS 2B equivalent parameters submitted • Damping calculation are submitted • Generator datasheet is not submitted • Exciter model parameters not submitted • SMIB equivalent model with .dyr file not shared • PSS/E model data for Governor may be shared



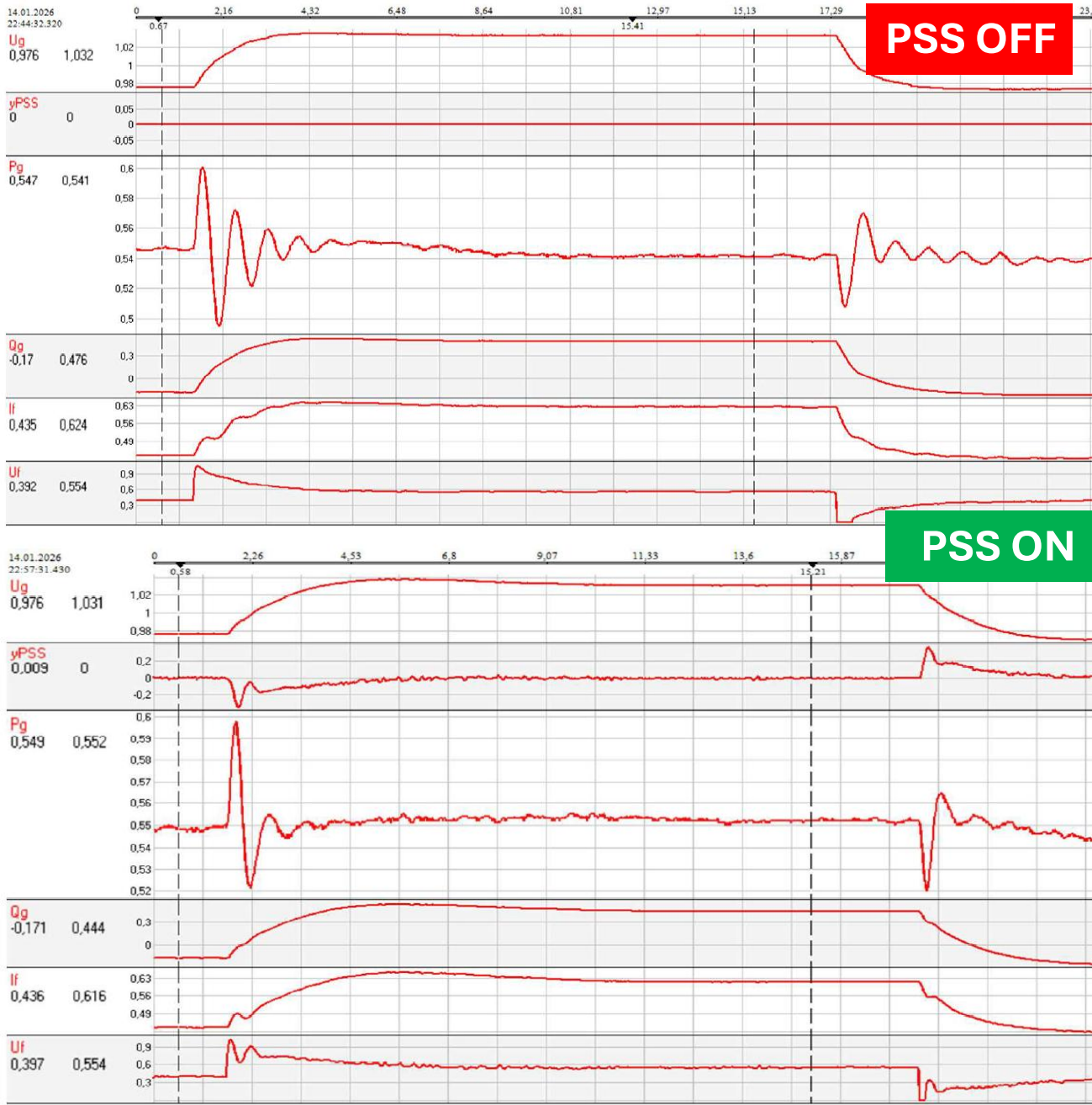
NLCIL ST2 – U7 – 210 MW

Date of Testing	27.03.2026
Exciter and PSS model	Andritz Hydro HIPASE Thyne 500, PSS2B
SRT done at power levels	+/- 3% and +/- 5% Step changes 60% and 80% load in two channels
Is PSS Effective?	Effective
Observations	- PSS 2B equivalent parameters submitted - Damping calculation are submitted - Generator datasheet is not submitted - Exciter model parameters not submitted - SMIB equivalent model with .dyr file not shared - PSS/E model data for Governor may be shared



KKNPP Unit-2-1000 MW

Date of Testing	14-01-2026
Exciter and PSS model	Not mentioned
SRT done at power levels	$\pm 2\%$ in channel-1,2 at 54% and 100% $\pm 4\%$ in channel-1,2 for 54% $\pm 3\%$ in channel-1,2 for 100%
Is PSS Effective?	Yes
Observations	- Damping calculation submitted - PSS/E model data for Governor and generator may be shared - AVR and PSS parameters shall be shared - SMIB equivalent model with .dvr file shall be shared



NTECL U#1 – 500 MW

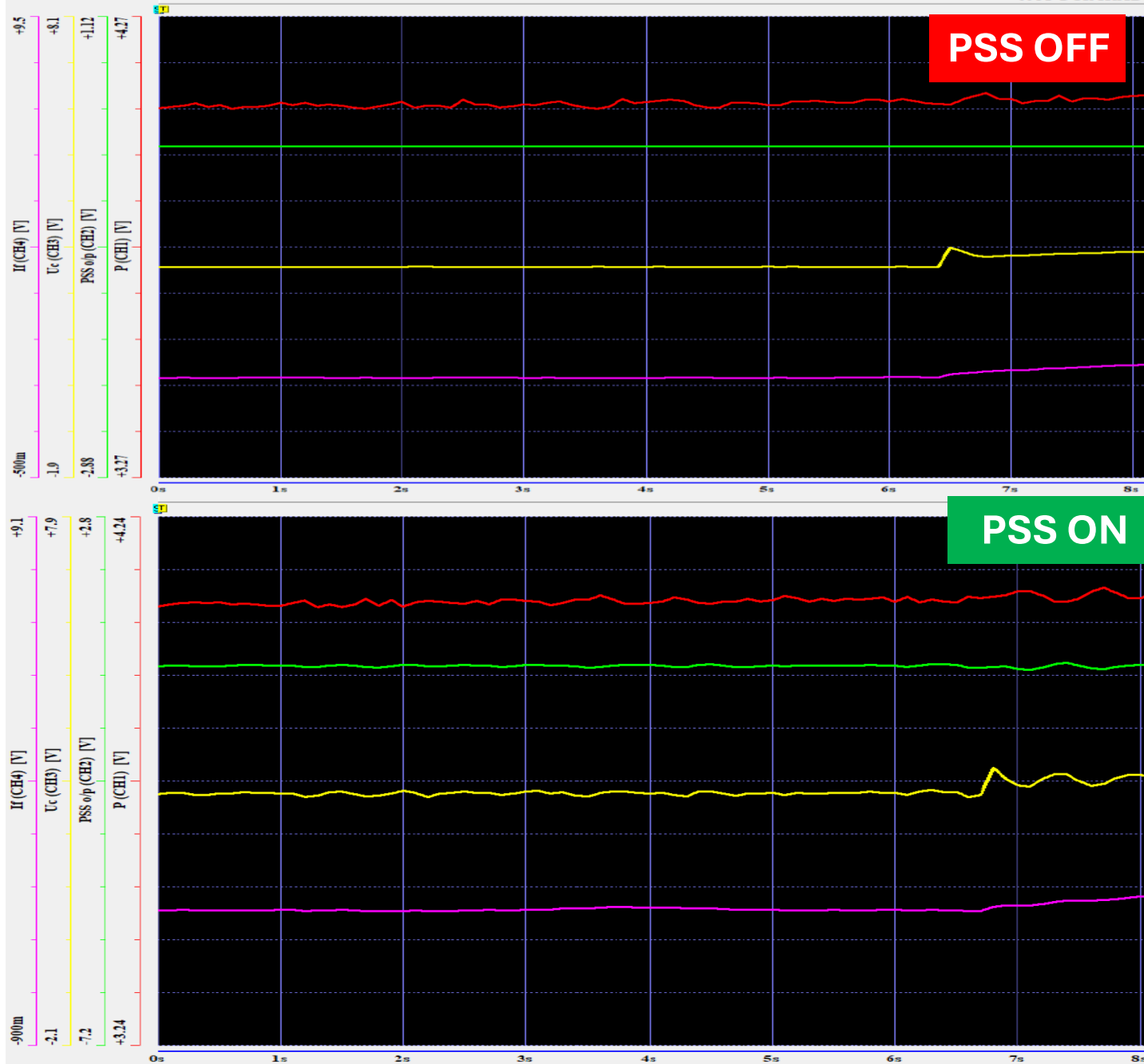
PSS OFF

Date of Testing	
Exciter and PSS model	
SRT done at power levels	
Is PSS Effective?	Not satisfactory based on damping calculations
Observations	• Report was not submitted as per the standard format • Only indicative images are submitted • Damping calculations are not satisfactory • No PSS/E equivalent models data along with the supporting datasheets is submitted • Repeat the test as per the RPC outlined procedure

PSS ON

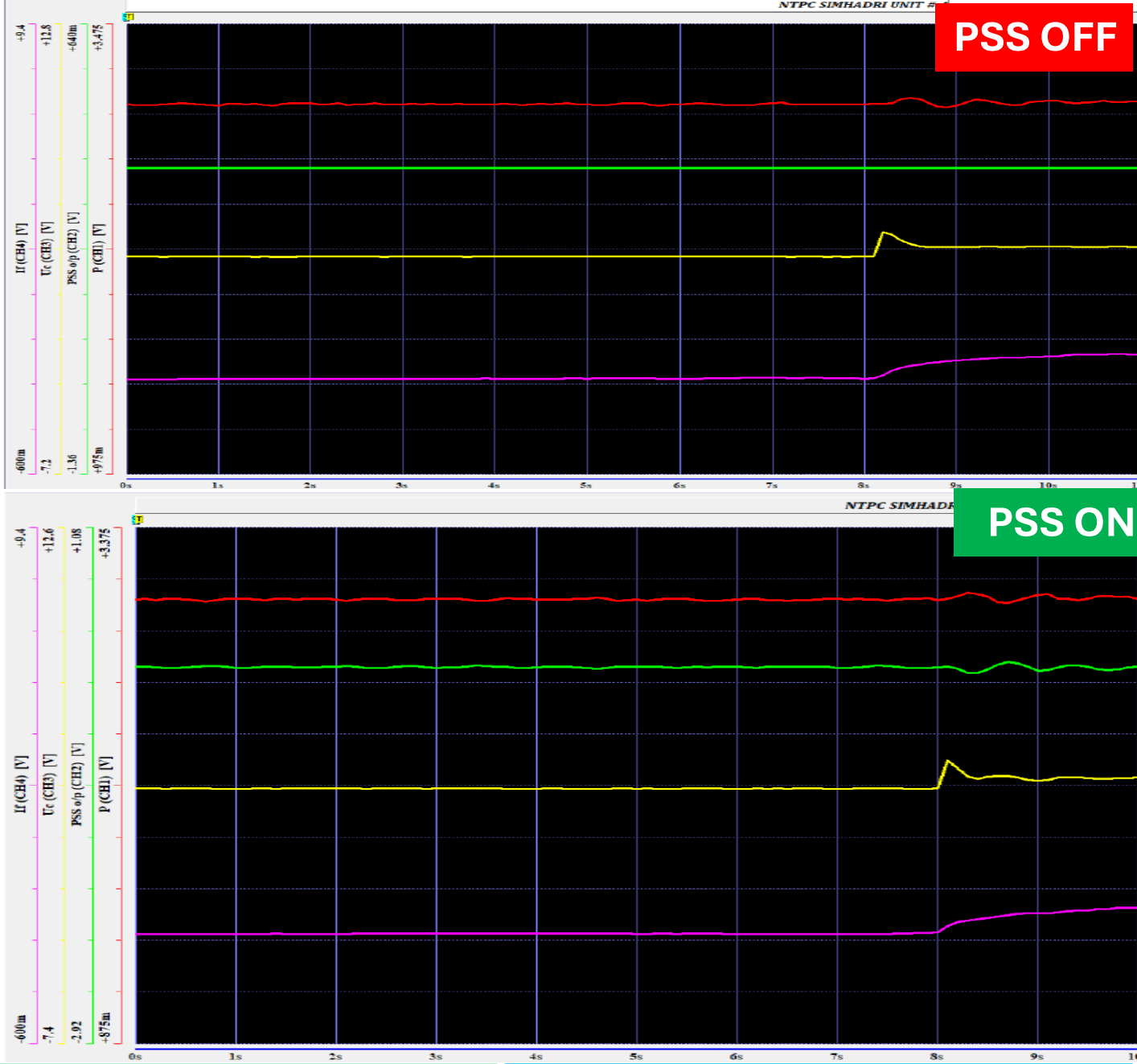
NTPC Simhadri U3-500 MW

Date of Testing	25-04-2026
Exciter and PSS model	ST5B, PSS3B – BHEL make
SRT done at power levels	±3% step test in two channels at 275 MW (58%) and 460 MW(92%)
Is PSS Effective?	Partially effective Not effective at 58% load
Observations	- Damping calculation submitted - Transfer function block diagram for the BHEL (UDM) is not submitted - Testing conducted at single step change - PSS/E model data for Governor and generator may be shared - AVR and PSS parameters in standard IEEE/PSSE shall be shared - SMIB equivalent model with .dyr file shall be shared



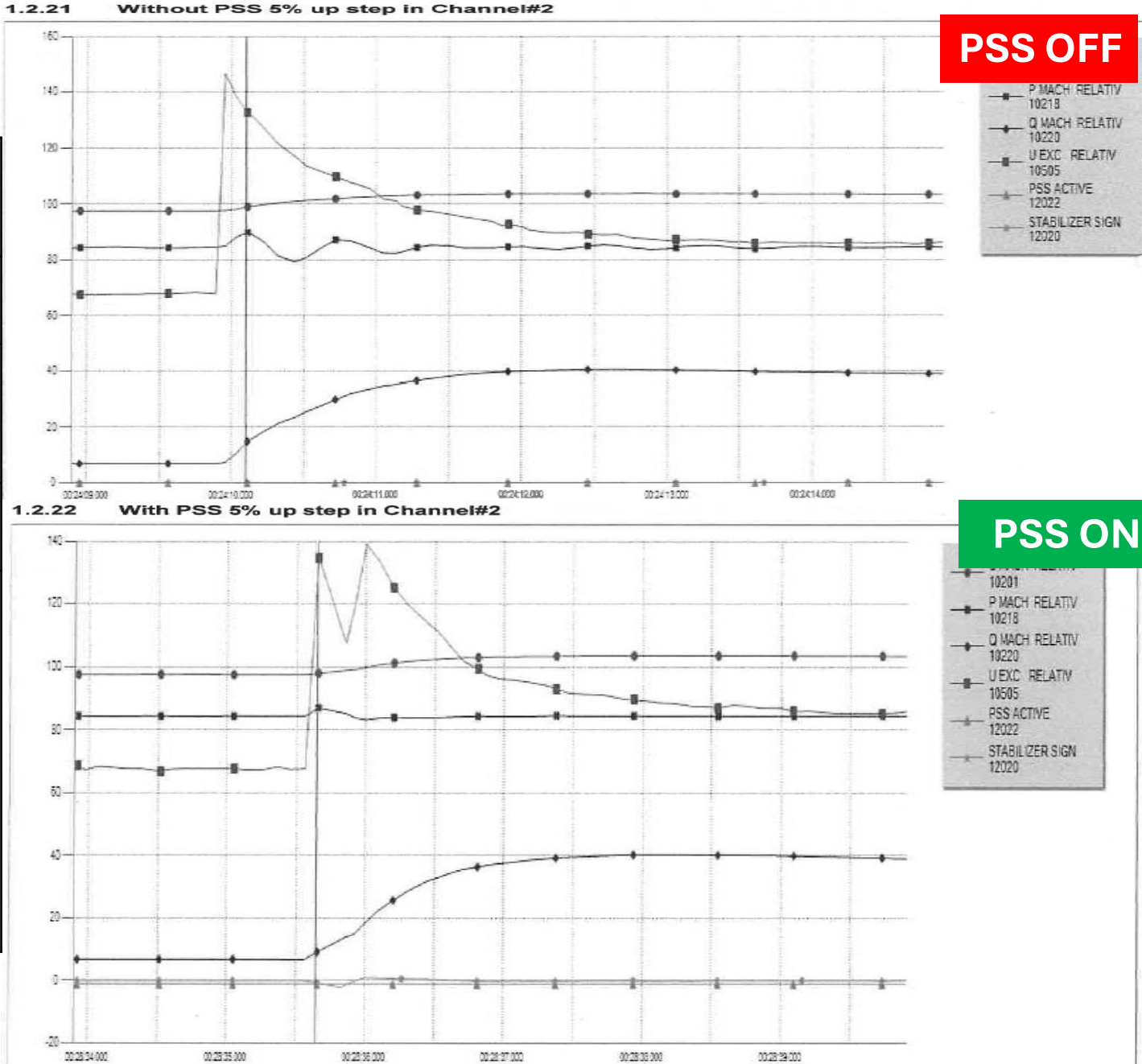
NTPC Simhadri U4-500 MW

Date of Testing	23-04-2026 and 28-04-2026
Exciter and PSS model	ST5B, PSS3B – BHEL make
SRT done at power levels	±3% step test in two channels at 275 MW (58%) and 460 MW(92%)
Is PSS Effective?	Effective at higher load percentages
Observations	- Damping calculation is submitted only for 92% load - Transfer function block diagram for the BHEL (UDM) is not submitted - Testing conducted at single step change - PSS/E model data for Governor and generator may be shared - AVR and PSS parameters in standard IEEE/PSSE shall be shared - SMIB equivalent model with .dyr file shall be shared



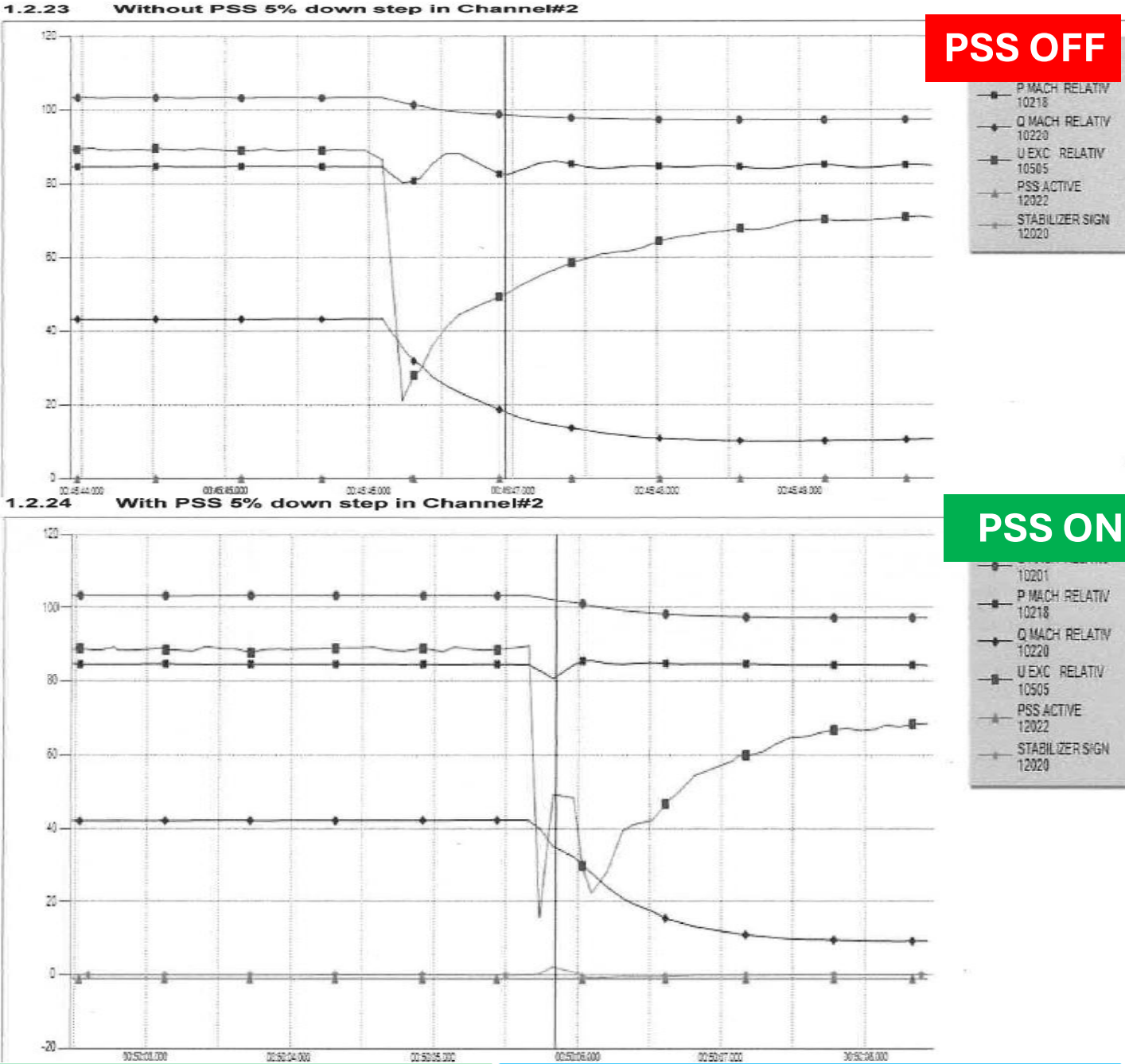
SEIL P1 U1-660 MW

Date of Testing	28-04-2026 and 29-04-2026
Exciter and PSS model	Unitrol 5000 Static Excitation, ABB
SRT done at power levels	+/- 2%, 3% and 5% done at 398 MW and 662 MW in dual channels
Is PSS Effective?	Effective
Observations	- Damping calculation is submitted - PSS parameters (most likely PSS2B) are submitted - PSS/E model data for Governor and generator may be shared - AVR parameters in standard IEEE/PSSE shall be shared - SMIB equivalent model with .dyr file shall be shared



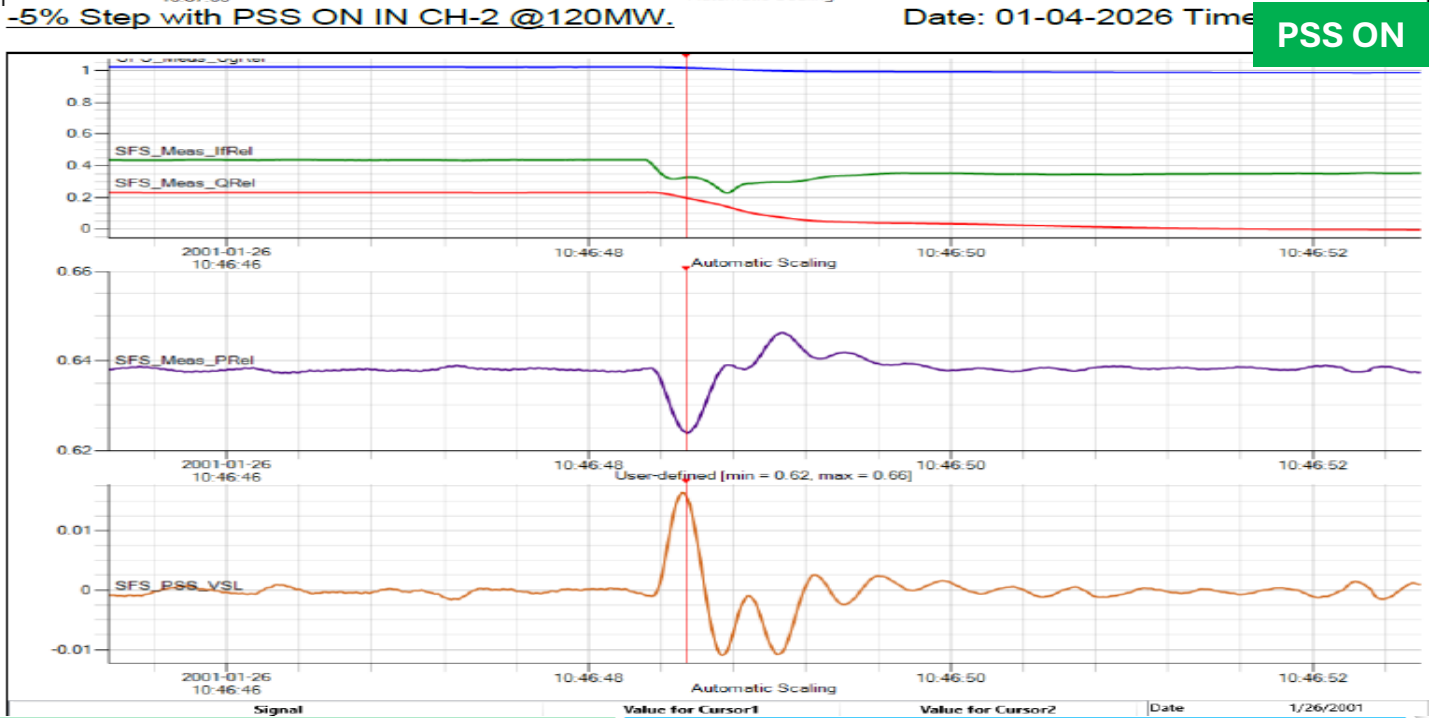
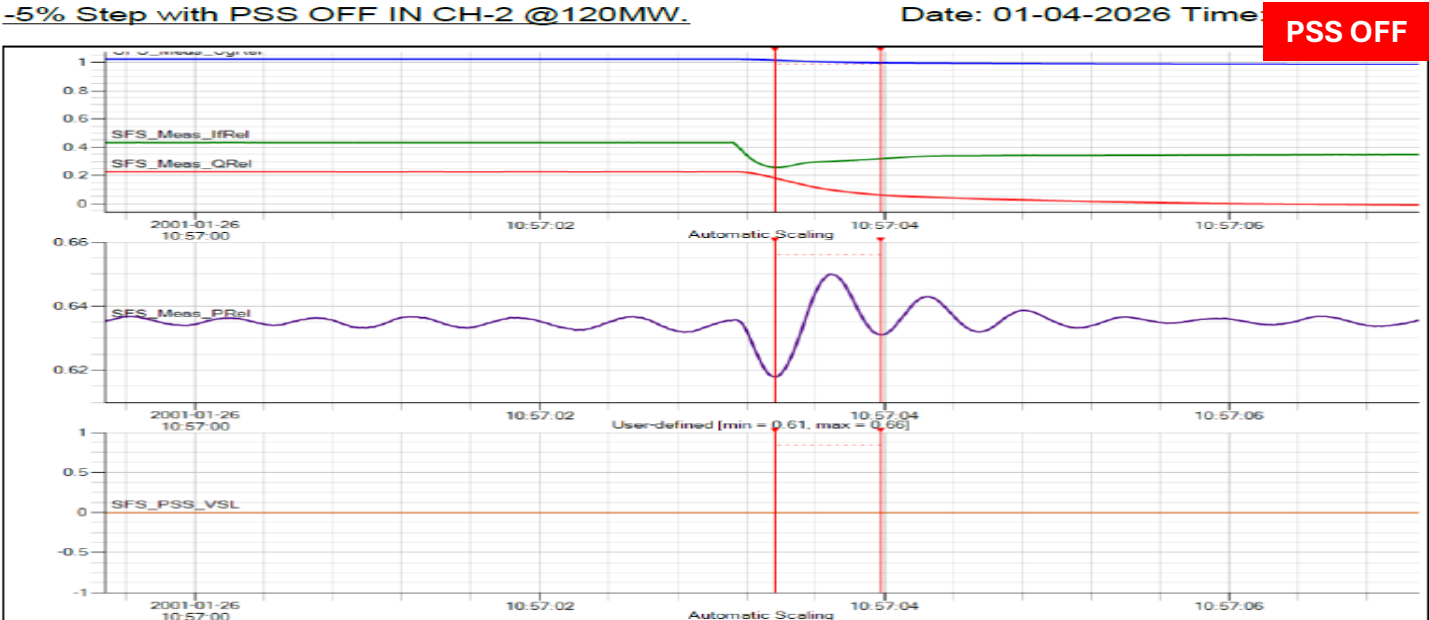
SEIL P1 U2-660 MW

Date of Testing	29-04-2026
Exciter and PSS model	Unitrol 5000 Static Excitation, ABB
SRT done at power levels	+/- 2%, 3% and 5% done at 398 MW and 662 MW in dual channels
Is PSS Effective?	Effective
Observations	- Damping calculation is submitted - PSS parameters (most likely PSS2B) are submitted - PSS/E model data for Governor and generator may be shared - AVR parameters in standard IEEE/PSSE shall be shared - SMIB equivalent model with .dyr file shall be shared



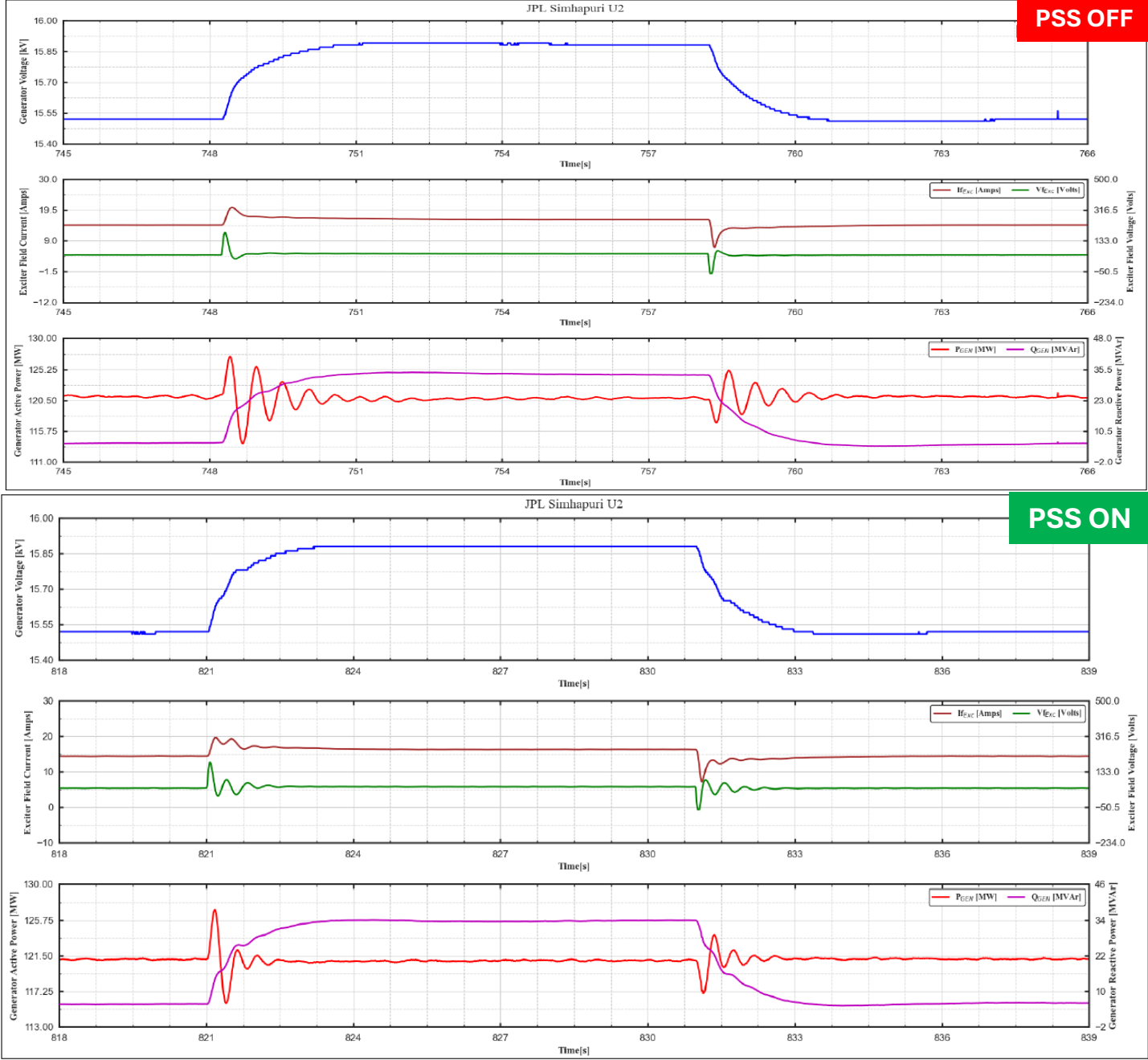
Simhapuri Jindal U1 – 150 MW

Date of Testing	31.03.2026
Exciter and PSS model	ABB Unitrol 6080, PSS2B
SRT done at power levels	80 MW and 120 MW 3%, 4%, 5% in both channels
Is PSS Effective?	Effective
Observations	- PSS and exciter parameters submitted - SMIB equivalent model with .dyr file shared - Damping calculation are submitted - PSS/E model data for Governor may be shared



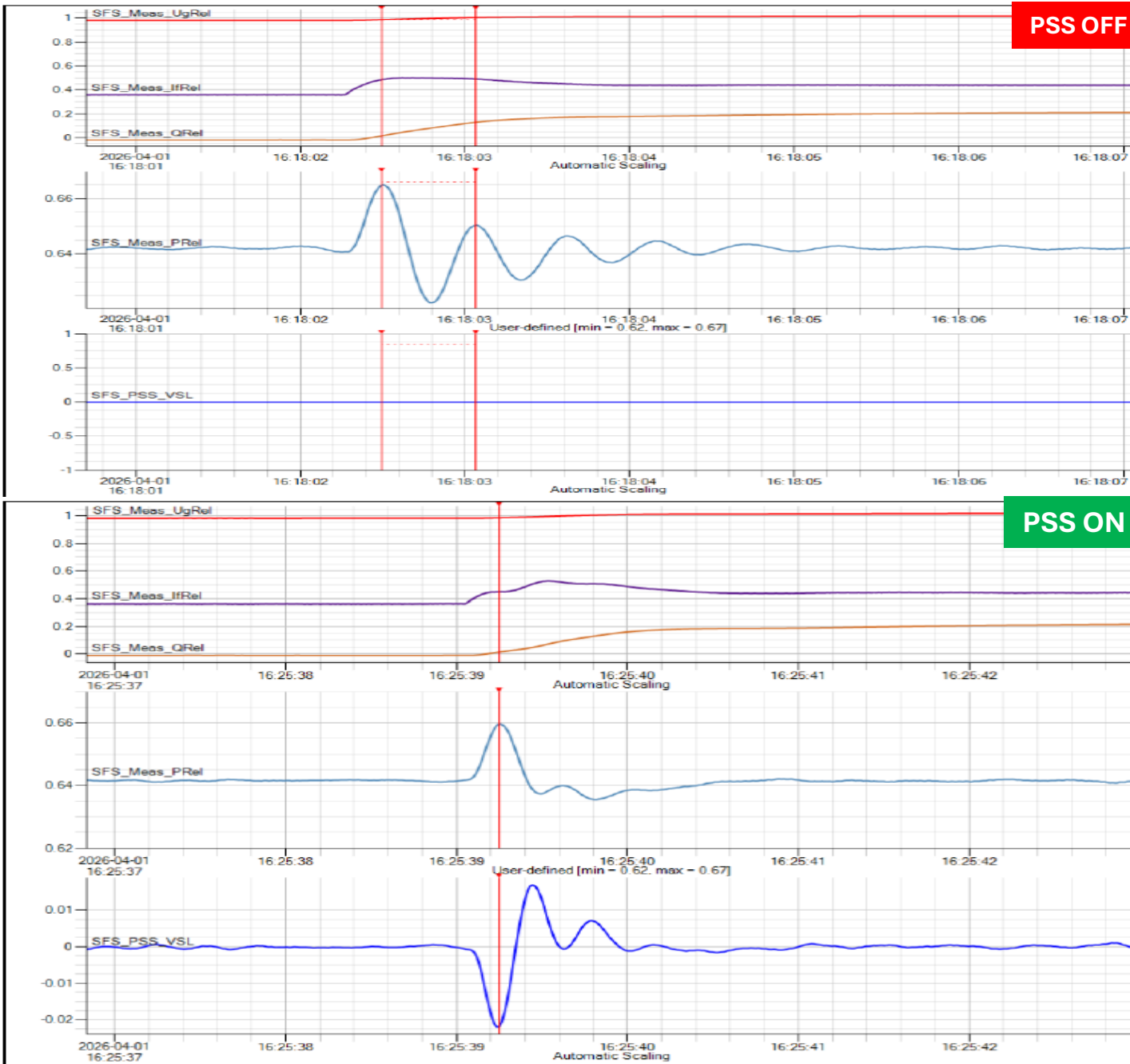
Simhapuri Jindal U2 – 150 MW

Date of Testing	20.04.2026
Exciter and PSS model	ABB Unitrol 6080, PSS2A
SRT done at power levels	82 MW and 120 MW 2%,3%, 4% in one channel
Is PSS Effective?	Effective
Observations	- PSS and exciter parameters submitted - SMIB equivalent model with .dyr file shared - Damping calculation are submitted - PSS/E model data for Governor may be shared



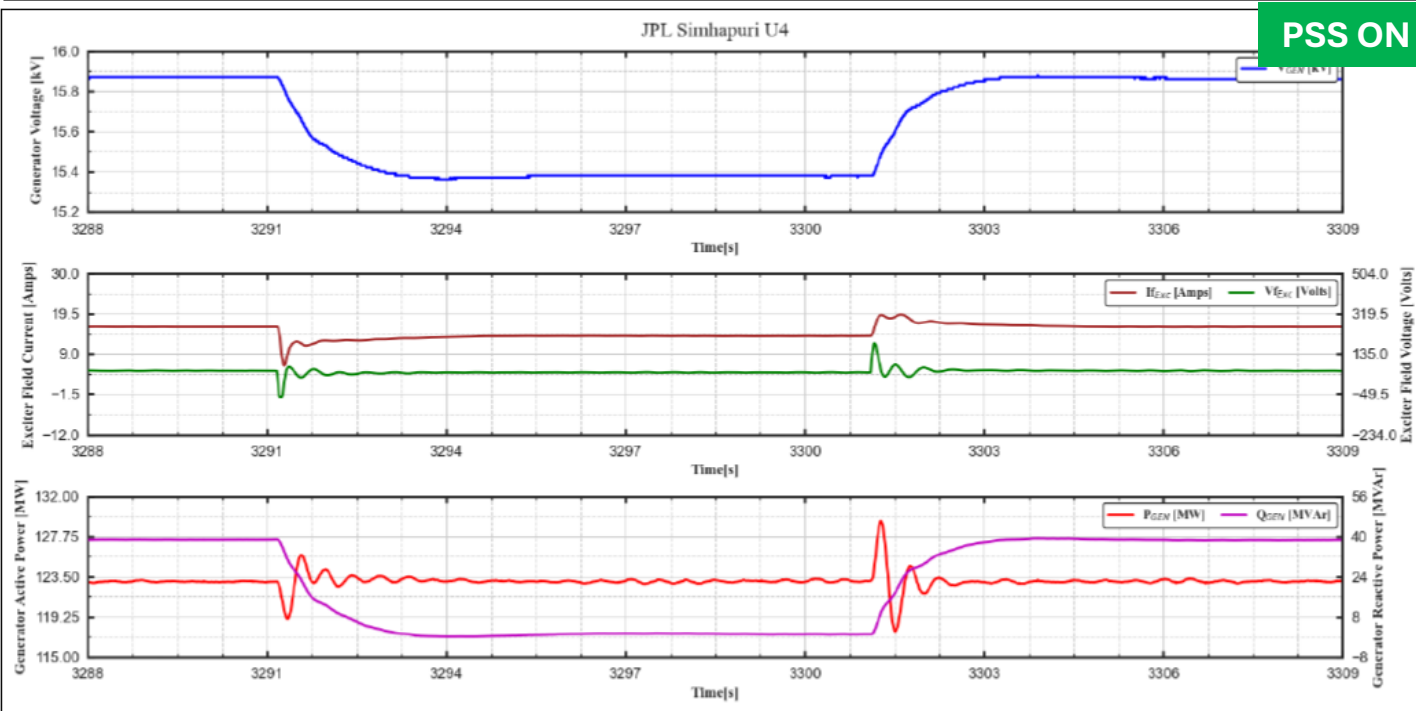
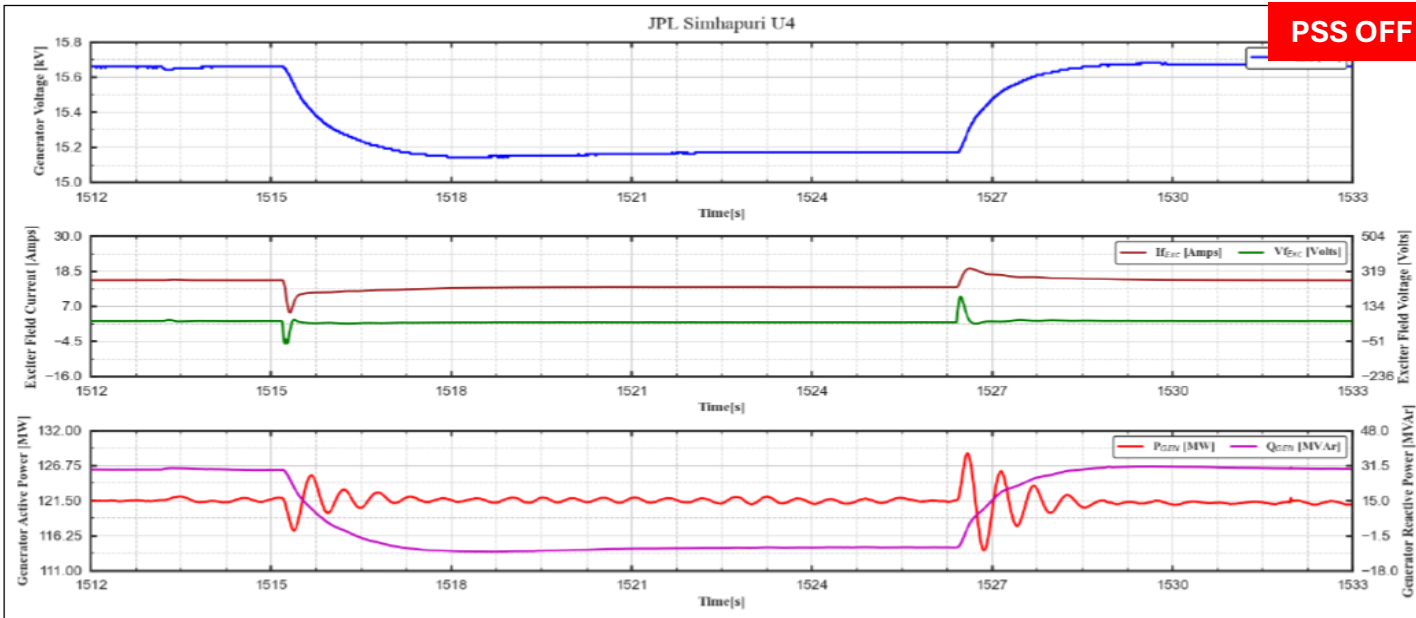
Simhapuri Jindal U3 – 150 MW

Date of Testing	01.04.2026
Exciter and PSS model	ABB Unitrol 6080, PSS2B
SRT done at power levels	80 MW and 120 MW 3%, 4%, 5% in both channels
Is PSS Effective?	Effective
Observations	- PSS and exciter parameters submitted - SMIB equivalent model with .dyr file shared - Damping calculation are submitted - PSS/E model data for Governor may be shared



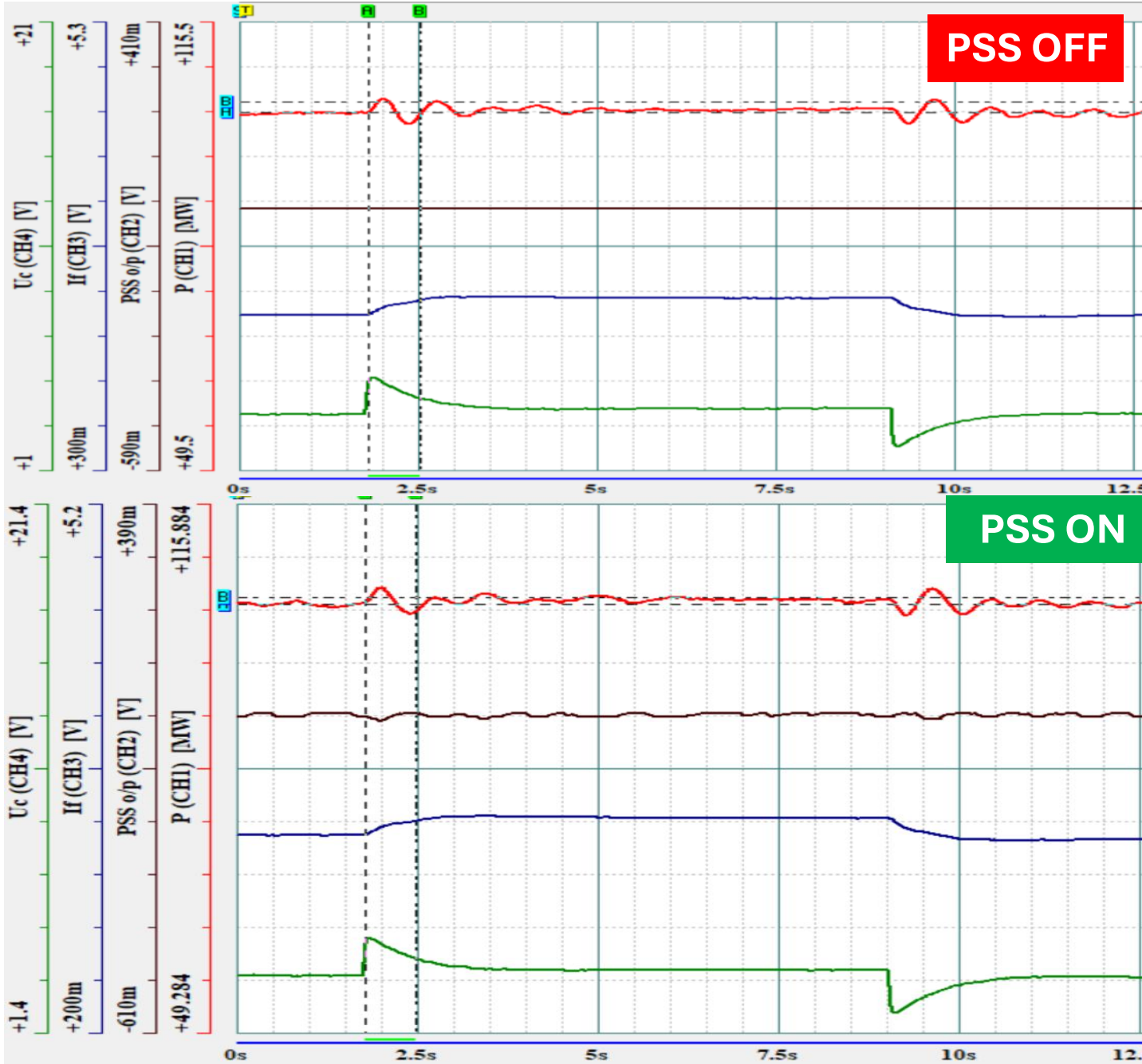
Simhapuri Jindal U4 – 150 MW

Date of Testing	21.04.2026
Exciter and PSS model	ABB Unitrol 6080, PSS2A
SRT done at power levels	84 MW and 130 MW 2%,3%, 4% in two channel
Is PSS Effective?	Effective
Observations	- PSS and exciter parameters submitted - SMIB equivalent model with .dyr file shared - Damping calculation are not submitted - PSS/E model data for Governor may be shared



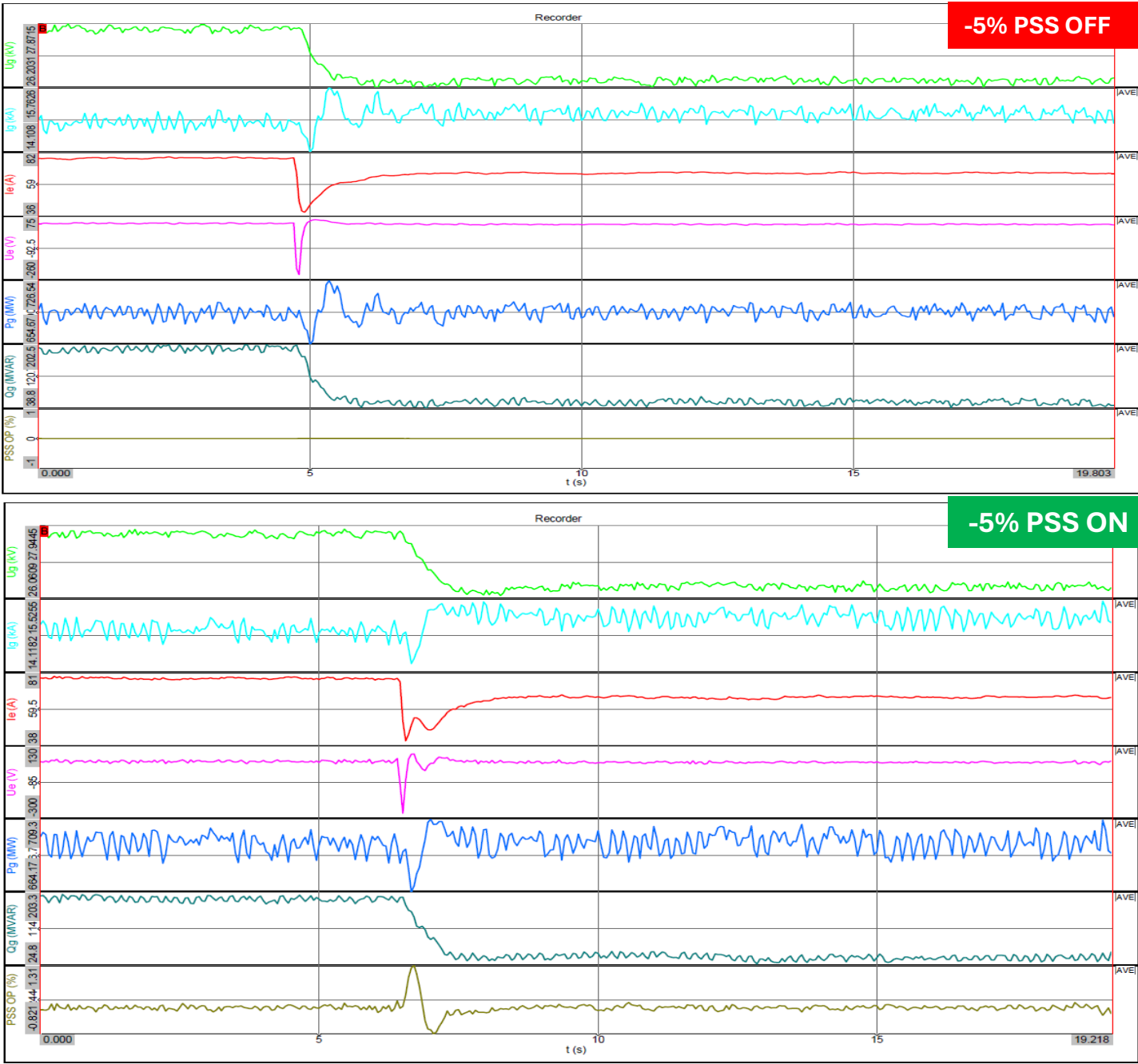
Nagjheri U#3-150 MW

Date of Testing	23-01-2026
Exciter and PSS model	ST5B, PSS3B – BHEL make
SRT done at power levels	±3% step test in only one channel at 100 MW and 140 MW
Is PSS Effective?	Yes – Based on damping torque calculation
Observations	- Damping calculation submitted - Transfer function block diagram for the BHEL (UDM) is submitted - Testing not performed in dual channels - Testing conducted at single step change - PSS/E model data for Governor and generator may be shared - AVR and PSS parameters in standard IEEE or PSS/E models shall be shared - SMIB equivalent model with .dyr file shall be shared



YTPS – U2 - 800 MW

Date of Testing	13.11.2025
Exciter and PSS model	SIEMENS THYRISIEM plus, PSS3B
SRT done at power levels	Ch-1: $\pm 3\%$ and $\pm 5\%$ at 415 MW and 750 MW Ch-2: $\pm 3\%$ and $\pm 5\%$ at 562 MW and 690 MW
Is PSS Effective?	Effective
Observations	- Damping calculation is submitted - PSS3B equivalent parameters submitted - PSS/E model data for Governor and generator may be shared - AVR in standard IEEE/PSSE shall be shared - SMIB equivalent model with .dyr file shall be shared



Thank You

Status of PSS Tuning/ SRT of generating Units of SR

The Regulation 29(7) of IEGC stipulates that ‘*The tuning of AVR, PSS, Voltage Controllers (PPC) including for low and high voltage ride through capability of wind and solar generators or any other requirement as per CEA Technical Standards for Connectivity shall be carried out by the respective generating station:*

- at least once every five (5) years;*
- based on operational feedback provided by the RLDC after analysis of a grid event or disturbance; and*
- in case of major network changes or fault level changes near the generating station as reported by NLDC or RLDC(s), as the case may be.*
- in case of a major change in the excitation system of the generating station.*

Entity	Station	Unit	Dates of Previous Tests	Next Tuning by*
APGENCO	Rayalaseema TPS (5x210 + 1x600MW)	Unit-1	13.01.2016 04.05.2022	04.05.2027
		Unit-2	13.01.2016 04.05.2022	04.05.2027
		Unit-3	13.01.2016 30.04.2022	30.04.2027
		Unit-4	13.01.2016 21.06.2019 04.05.2022	04.05.2027
		Unit-5	13.01.2016 30.04.2022	30.04.2027
		Unit-6	12.12.2018 02.05.2022	02.05.2027
	Vijayawada TPS (NTTPS) (6x210MW+1x500MW)	Unit-1	01.04.2016 24.12.2019 20/22.02.2023	20.02.2028
		Unit-2	01.04.2016 24.12.2019 20/22.02.2023	20.02.2028
		Unit-3	01.04.2016 23.12.2019 20/22.02.2023	20.02.2028
		Unit-4	01.04.2016 23.12.2019 20/22.02.2023	20.02.2028
		Unit-5	27.12.2018 21.12.2019 21.02.2023	21.02.2028
		Unit-6	11.02.2019 25.08.2021 20.02.2023	20.02.2028
		Unit-7	01.04.2016 24.12.2019 21.02.2023	21.02.2028
	SDSPP(Krishnapatnam JV) (3x800 MW)	Unit-1	12.04.2018	12.04.2023
		Unit-2	13.04.2018	13.04.2023
		Unit-3	24.09.2024	24.09.2029
	Lower Sileru HEP	Unit-1	13.12.2016	13.12.2021

	(4x115MW)	Unit-2	14.08.2021	14.08.2026
		Unit-3 &4	RLA study completed. Report awaited	
	Srisailem RB HEP (7x110MW)	Unit-1	29.09.2016 06.10.2020	06.10.2025
		Unit-2	29.09.2016 06.10.2020	06.10.2025
		Unit-3	28.09.2016 06.10.2020	06.10.2025
		Unit-4	29.09.2016 06.10.2020	06.10.2025
		Unit-5	30.09.2016 06.10.2020	06.10.2025
		Unit-6	01.10.2016 06.10.2020	06.10.2025
		Unit-7	30.09.2016 06.10.2020	06.10.2025
AP- IPPs	HNPCL (2x520 MW)	Unit-1	28.03.2017	28.03.2022
		Unit-2	27.03.2017	27.03.2022
KPCL	Raichur TPS (7x210MW+1x250MW)	Unit-1	18.06.2016 22.12.2021 08.01.2022	08.01.2027
		Unit-2	22.08.2016 22.12.2021	22.12.2026
		Unit-3	17.06.2016 07.10.2022	07.10.2027
		Unit-4	06.09.2017 07.11.2022	07.11.2027
		Unit-5	24.11.2015 14.03.2019 20.07.2023 23.07.2024	23.07.2029
		Unit-6	17.12.2015 15.03.2019 20.07.2023 24.07.2024	24.07.2029
		Unit-7	17.12.2015 02.08.2019 20.07.2023	20.07.2028
		Unit-8	19.11.2015 15.03.2019 19.07.2023 24-07-2024	24.07.2029
	BTPS (2x500MW+1x700MW)	Unit-1	15.10.2015 18.08.2017 23.11.2020	23.11.2025
		Unit-2	31.12.2015 24.11.2020	24.11.2025
		Unit-3	26.08.2016 02.04.2021	02.04.2026
	Yeramarus TPS (2x800MW)	Unit-1	-	-
		Unit-2	10.11.2025 to 13.11.2025	10.11.2030 to 13.11.2030
	Varahi UGPH (4x115 MW)	Unit-1	23.10.2016 17.10.2019	09.11.2027

			09.11.2022	
		Unit-2	23.10.2016 17.10.2019 09.11.2022	09.11.2027
		Unit-3	24.07.2017 18.10.2019 10.11.2022	10.11.2027
		Unit-4	23.10.2016 18.10.2019 10.11.2022	10.11.2027
	Nagjheri HEP (5x150MW+1x135MW)	Unit-1	4/5.01.2017	04.01.2022
		Unit-2	4/5.01.2017	04.01.2022
		Unit-3	02.06.2016 13.03.2020 22.01.2026	22.01.2031
		Unit-4	4/5.01.2017	04.01.2022
		Unit-5	4/5.01.2017	04.01.2022
		Unit-6	17.08.2017	17.08.2022
	Sharavathy HEP (10x103.5 MW)	Unit-1	08.06.2017 05.04.2021	05.04.2026
		Unit-2	08.06.2017 03.04.2021	03.04.2026
		Unit-3	12.11.2016 23.10.2019 18.10.2022	18.10.2027
		Unit-4	08.06.2017 05.04.2021	05.04.2026
		Unit-5	11.11.2016 06.11.2019 07.04.2021	07.04.2026
		Unit-6	7/8.06.2017 25.09.2021	25.09.2026
		Unit-7	10.11.2016 23.10.2019 19.10.2022	19.10.2027
		Unit-8	13.12.2017 05.04.2021 04.11.2022	04.11.2027
		Unit-9	11.11.2016 31.10.2019 18.10.2022	18.10.2027
		Unit-10	11.11.2016 07.11.2019 10.11.2022	10.11.2027
KAR-IPPs	UPCL (2x600 MW)	Unit-1	04.10.2015 18.02.2021	18.02.2026
		Unit-2	23.10.2015 18.02.2021	18.02.2026
	JSWEL (4x300 MW)	Unit-1	15.02.2017 28.01.2020 12.02.2024	12.02.2029
		Unit-2	21.10.2016 08.06.2022	08.06.2027
		Unit-3	21.10.2016	11.08.2028

			28.01.2020 11.08.2023	
		Unit-4	26.09.2018 18.05.2022	18.05.2027
KSEBL	Idukki HEP (6x130MW)	Unit-1	15.12.2021	15.12.2026
		Unit-2	15.12.2021	15.12.2026
		Unit-3	15.12.2021	15.12.2026
		Unit-4		
		Unit-5		
		Unit-6	09.11.2023	09.11.2028
TNPGCL	NCTPS Stage-I (3x210 MW)	Unit-1	01.04.2018 09.07.2021, 12.07.2021	12.07.2026
		Unit-2	05.04.2017 29.01.2021	29.01.2026
		Unit-3	06.04.2017 29.01.2021	29.01.2026
	NCTPS Stage-II (2x600 MW)	Unit-1	31.08.2017 30.12.2022	30.12.2027
		Unit-2	30.08.2017 23/24.08.2022	23.08.2027
	Tuticorin TPS (5x210MW)	Unit-1	03.02.2018 06.10.2021	06.10.2026
		Unit-2	12.11.2019 22.12.2022	22.12.2027
		Unit-3	29.07.2019 25.11.2022	25.11.2027
		Unit-4	28.12.2016 31.12.2019 10.01.2020 10/11.01.2023	10.01.2028
		Unit-5	29.12.2016 15.03.2021	15.03.2026
	Mettur TPS Stage-I (4x210 MW)	Unit-1	09.10.2017 08.10.2020 14.09.2023	14.09.2028
		Unit-2	22.07.2017 08.04.2021	08.04.2026
		Unit-3	07.09.2016 12.11.2019 27.12.2022	27.12.2027
		Unit-4	09.10.2015 09.11.2019 28.12.2022	28.12.2027
	Mettur TPS Stage-III (1x600 MW)	Unit-1	10.08.2017 10.09.2020 08/13.09.2023	08.09.2028
	Kadamparai HEP (4x100 MW)	Unit-1	22.08.2017	22.08.2022
		Unit-2	22.08.2017	22.08.2022
		Unit-3	22.08.2017	22.08.2022
		Unit-4	22.08.2017	22.08.2022
TN IPP	STCMS (1 x 250 MW)	Unit-1	29.09.2018 22.09.2023	22.09.2028

	SEPC (1 x 525 MW)	Unit-1	15/16.05.2024	
TGGENCO	Kakatiya TPS (1x500MW +1x600MW)	Unit-1	24.01.2016 27.02.2019 30.09.2022	30.09.2027
		Unit-2	06.07.2016 27.02.2019 30.09.2022	30.09.2027
	Kothagudam TPS (2x250 +500 +800 MW)	Unit-9	22.12.2015 08/10.01.2020 12/13.09.2022	12.09.2027
		Unit-10	22.12.2015 08/10.01.2020 21.11.2024	21.11.2029
		Unit-11	22.12.2015 08/10.01.2020 13.03.2023	13.03.2028
		Unit-12	29.06.2019 10.03.2023	10.03.2028
	Bhadradi TPS (4x270MW)	Unit-1	28.03.2022	28.03.2027
		Unit-2	28.03.2022	28.03.2027
		Unit-3	29.03.2022	29.03.2027
		Unit-4	29.03.2022	29.03.2027
	Yadadi TPS (5 x 800 MW)	Unit-2	-	-
	NagarjunasagarHEP (1x110MW+7x100.8MW)	Unit-1	04.03.2017	04.03.2022
		Unit-2	08.01.2017 14.08.2021	14.08.2026
		Unit-3	08.01.2017 14.08.2021	14.08.2026
		Unit-4	08.01.2017 07.01.2017 14.08.2021	14.08.2026
		Unit-5	08.01.2017 07.01.2017 14.08.2021	14.08.2026
		Unit-6	08.01.2017 14.08.2021	14.08.2026
		Unit-7	08.01.2017 14.08.2021	14.08.2026
		Unit-8	08.01.2017 14.08.2021	14.08.2026
	Srisaillam LB (6x150 MW)	Unit-1	20.01.2017 07.09.2022	07.09.2027
		Unit-2	23.01.2017 07.09.2022	07.09.2027
		Unit-3	21.01.2017 07.09.2022	07.09.2027
		Unit-4	19.01.2017	19.01.2022
		Unit-5	22.01.2017 07.09.2022	07.09.2027
		Unit-6	21.01.2017 07.09.2022	07.09.2027
	Singareni TPS (2x600 MW)	Unit-1	30.10.2017 22.05.2021 27/28.02.2023	27.02.2028

		Unit-2	30.10.2017 22.05.2021 27/28.02.2023	27.02.2028
NTPC	RSTPS Stage-I, II & III (3x200MW+4x500MW)	Unit-1	17.05.2024	17.05.2029
		Unit-2	17.05.2024	17.05.2029
		Unit-3	01.05.2017 17-05-2024	17.05.2029
		Unit-4	21.02.2018 14/15.11.2025	
		Unit-5	28.11.2018 14/15.11.2025	
		Unit-6	28.11.2018 14/15.11.2025	
		Unit-7	19.10.2016 21/24.06.2024	
	Simhadri STPS Stage-I & II (4x500 MW)	Unit-1	14.03.2016 04.12.2019	04.12.2024
		Unit-2	18.03.2016 04.12.2019	04.12.2024
		Unit-3	18.03.2016 05.12.2019 25.04.2026	25.04.2031
		Unit-4	18.03.2016 04.12.2019 23/28.04.2026	23/28.04.2031
	Talcher STPS Stage-II (4x500 MW)	Unit-3	04.06.2016 July 2022	Reports to be resubmitted for analysis.
		Unit-4	July 2022	Reports to be resubmitted for analysis
		Unit-5	17.12.2022	17.12.2027
		Unit-6	04.06.2016 July 2022	Reports to be submitted for analysis
	Kudgi STPS Stage-I (3x800 MW)	Unit-1	10.09.2016 18.02.2022 to 25.02.2022	25.02.2027
		Unit-2	02.11.2017 19.02.2022	19.02.2027
		Unit-3	29.04.2018 20/21.02.2022	20.02.2027
	NTPC Telangana	Unit-1	28.07.2023	28.07.2028
		Unit-2	02.02.2024	02.02.2029
	NTPC Kayamkulam		-	-
NTECL	Vallur TPS (3x500MW)	Unit-1	09.11.2016 10.09.2019 17.06.2024	
		Unit-2	08.11.2016 11.10.2023	
		Unit-3	07.11.2016 10.10.2023	
NLCIL	TPS-II Stage-I&II (7x210 MW)	Unit-1	18/19.04.2017 27.06.2026	27.06.2031
		Unit-2	18/19.04.2017 14.11.2024	14.11.2029
		Unit-3	18/19.04.2017 23.08.2022	21.04.2031

			21.04.2026	
		Unit-4	23.12.2016 17.06.2021	17.06.2026
		Unit-5	23.12.2016 17.06.2021 13.02.2026	13.02.2031
		Unit-6	23.12.2016 June 21 10.01.2026	10.01.2031
		Unit-7	23.12.2016 17.06.2021 21.02.2026	21.02.2031
		TPS-IExpn. (2x210 MW)	Unit-1	12.10.2015
			Unit-2	05.11.2015
		TPS-IIExpn. (2x250 MW)	Unit-1	19.04.2017
			Unit-2	19.04.2017
		NNTPS (2x500 MW)	Unit-1	03.12.2021
			Unit-2	21.09.2021
NTPL	NLC&TNJV (2x500MW)	Unit-1	24.05.2017 04/05.01.2023	04.01.2028
		Unit-2	02.08.2017 04/05.01.2023	04.01.2028
NPCIL	MAPS (2x220 MW)	Unit-1	11.01.2006	11.01.2011
		Unit-2	03.08.2003 20.11.2018	20.11.2023
	KGS (4x220 MW)	Unit-1	22.02.2019 22.09.2019 04.10.2023	04.10.2028
		Unit-2	12.03.2017 02.01.2025	02.01.2030
		Unit-3	19.04.2017 21.11.2020 14.06.2023	14.06.2028
		Unit-4	25.11.2017 19.01.2020 04.08.2023	04.08.2028
	KKNPP (2x1000 MW)	Unit-1	01.02.2016 22.05.2019 September 22	September 27
		Unit-2	21.02.2017 20.03.2020 April 2021 14.01.2026	14.01.2031
ISTS-IPPs	SEILP-I(TPCIL) (2x660 MW)	Unit-1	23.12.2016 21.01.2023 28/29.04.2026	28/29.04.2031
		Unit-2	30.11.2017 21.01.2023 28/29.04.2026	28/29.04.2031
	SEILP-II(SGPL) (2x660 MW)	Unit-1	14.06.2018 02/03.08.2022	03.08.2027
		Unit-2	14.06.2018 02/03.08.2022	03.08.2027
	CEPL	Unit-1	17.07.2018	17.07.2023

	(2x600 MW)	Unit-2	16.08.2016 12.06.2023	12.06.2028
	ITPCL (2x600 MW)	Unit-1	12.04.2015 21.11.2019 23.12.2022	23.12.2027
		Unit-2	14.04.2016 10.12.2018 21.11.2019 17.05.2023	17.05.2028
	Lanco Stage II & III (1*233 + 1*133 +2*371)		-	
	SEL	Unit-1	31.03.2026/ 01.04.2026	31.03.2031/ 01.04.2031
		Unit-2	20.04.2026	20.04.2031
		Unit-3	01.04.2026	01.04.2031
		Unit-4	21.04.2026	21.04.2031
	MEL	Units-1 to 4	-	

Note: In case there is change wrt points b), c) and d) of Regulation 29(7) of IEGC wrt a generator, then PSS tuning to be carried out by the generator at the earliest opportunity.
