

CENTRAL ELECTRICITY REGULATORY COMMISSION

NEW DELHI

Petition Nos. 198MP/2020, 259/MP/2020 and 539/MP/2020

Coram:

Shri Jishnu Barua, Chairperson

Shri I. S. Jha, Member

Shri Arun Goyal, Member

Shri P. K. Singh, Member

Date of Order: 8th November 2023

Petition No. 198/MP/2020

In the matter of:

Providing protection systems having reliability, selectivity, speed and sensitivity and keeping them functional in terms of Regulation 5.2 (I) of the CERC (Indian Electricity Grid Code) Regulations 2010 read along with Regulation 3 (e) of the Central Electricity Authority (Grid Standards) Regulations, 2010 , ensuring proper inspection & patrolling and maintenance of substation and lines in terms of Regulation 5 read along with regulation 23 & regulation 24 of the Central Electricity Authority (Grid Standards) Regulations, 2010 for ensuring security of the North Eastern Grid as well as the interconnected Indian Grid and reliable operation as per clause no. 6.2 of Central Electricity Authority (Manual on Transmission Planning Criteria), 2013.

And

In the matter of:

North Eastern Regional Load Despatch Centre (NERLDC),
Power System Operation Corporation Ltd.,
(A Govt. of India Enterprise)
Dongtiah Lower Nongrah, Lapalang,
Shillong -793006

.....Petitioner

Versus

1. Chief Engineer (Power), Western Zone,
Vidyut Bhawan, Department of Power,
Zero Point Tinali, Itanagar, 791111
2. Chief Engineer (Power), Eastern Zone,
Vidyut Bhawan, Department of Power,
Zero Point Tinali, Itanagar, 791111



3. Chief Engineer (Power), Central Zone,
Vidyut Bhawan, Department of Power,
Zero Point Tinali, Itanagar, 791111
4. Chief Engineer (Transmission, Planning & Monitoring),
Vidyut Bhawan, Department of Power,
Zero Point Tinali, Itanagar, 791111
5. Superintending Engineer (E), SO & PSC,
SLDC Arunachal Pradesh, Department of Power,
Govt. of Arunachal Pradesh, Itanagar-791111

..... Respondents

6. Member Secretary,
NERPC Complex, Dong Parmaw, Lapalang,
Shillong - 793006.

..... Proforma Respondent

Petition No. 259/MP/2020

In the matter of:

Providing protection systems having reliability, selectivity, speed and sensitivity and keeping them functional in terms of Regulation 5.2 (1) of the CERC (Indian Electricity Grid Code) Regulations 2010 read along with Regulation 3 (e) of the Central Electricity Authority (Grid Standards) Regulations, 2010 , ensuring proper inspection & patrolling and maintenance of substation and lines in terms of Regulation 5 read along with regulation 23 & regulation 24 of the Central Electricity Authority (Grid Standards) Regulations, 2010 for ensuring security of the North Eastern Grid as well as the interconnected Indian Grid and reliable operation as per clause no. 6.2 of Central Electricity Authority (Manual on Transmission Planning Criteria), 2013.

And

In the matter of:

North Eastern Regional Load Despatch Centre (NERLDC),
Power System Operation Corporation Ltd.,
(A Govt. of India Enterprise)
Dongtiah Lower Nongrah, Lapalang,
Shillong -793006

.....Petitioner

Versus

1. Engineer-in-chief (Power), Department of Power,
Govt. of Nagaland, Kohima-797001
2. Executive Engineer (Transmission), SLDC Nagaland
DoP Nagaland, Electricity Colony, Full Nagarjan,
Dimapur, Nagaland-797112

.....Respondents

3. Member Secretary,



NERPC
NERPC Complex, Dong Parmaw, Lapalang,
Shillong-793006

.....Proforma Respondent

Petition No. 539/MP/2020

In the matter of:

Providing protection systems having reliability, selectivity, speed and sensitivity and keeping them functional in terms of Regulation 5.2 (1) of the CERC (Indian Electricity Grid Code) Regulations 2010 read along with Regulation 3 (e) of the Central Electricity Authority (Grid Standards) Regulations, 2010 , ensuring proper inspection & patrolling and maintenance of substation and lines in terms of Regulation 5 read along with regulation 23 & regulation 24 of the Central Electricity Authority (Grid Standards) Regulations, 2010 for ensuring security of the North Eastern Grid as well as the interconnected Indian Grid and reliable operation as per clause no. 6.2 of Central Electricity Authority (Manual on Transmission Planning Criteria), 2013.

And

In the matter of:

North Eastern Regional Load Despatch Centre (NERLDC),
Power System Operation Corporation Ltd.,
(A Govt. of India Enterprise)
Dongtiah Lower Nongrah, Lapalang,
Shillong -793006

.....Petitioner

Versus

1. General Manager (SLDC),
Office of MSPCL, Keishampat, Imphal – 79500
2. DGM (substation Division No.1),
MSPCL Keishampat Electricity Complex,
Khwai Bazar, Imphal, Manipur – 795001
3. Managing Director, MSPCL,
Electricity Complex, Keishampat, Imphal -795001

.....Respondents

4. Member Secretary,
NERPC Complex, Dong Parmaw, Lapalang,
Shillong -793006

.....Proforma Respondent

Parties Present:

Shri Samir Chandra De, NERLDC
Ms. Himani Dutta, NERLDC
Shri Raj Singh Nirajan, Advocate, Dept. of Power, AP



Shri Rajni Patel, Advocate, Dept. of Power, AP
Shri Utham Harish, Advocate, Dept. of Power, AP
Shri Nangkong Perme, Dept. of Power, AP
Shri S. I. Asangba Tikhar, Dept. of Power, Nagaland
Shri Utpal Das, NERLDC

ORDER

North Eastern Regional Load Despatch Centre (NERLDC) has filed Petition No. 198/MP/2020, 259/MP/2020 and 539/MP/2020 for the State of Arunachal Pradesh, Nagaland and Manipur respectively, for providing protection systems having reliability, selectivity, speed and sensitivity and keeping them functional in terms of Regulation 5.2 (l) of the CERC (Indian Electricity Grid Code) Regulations 2010 (hereinafter referred to as "Grid Code") read along with Regulation 3 (e) of the Central Electricity Authority (Grid Standards) Regulations, 2010 (hereinafter referred to as "Grid Standards"). This is for ensuring proper inspection and patrolling and maintenance of substations and lines in terms of Regulation 5 read along with Regulation 23 and Regulation 24 of the Grid Standards for ensuring the security of the North Eastern Grid as well as the interconnected Indian Grid and reliable operation as per Clause no. 6.2 of Central Electricity Authority (Manual on Transmission Planning Criteria), 2013.

2. The Petitioner has made the following prayers in each Petition:

Prayer in Petition No. 198/MP/2020

- i. *DoP, Arunachal Pradesh may be directed to:*
 - a. *Ensure proper execution and implementation of Renovation & Upgradation (R&U) work under PSDF within 6 months.*
 - b. *Ensure proper protection system for all the elements connected at all sub-stations of 132 kV and above owned by DoP, Arunachal Pradesh within 3 months.*
 - c. *Ensure and adopt proper and periodical preventive maintenance norms of substations and transmission lines including RoW clearance, jungle cutting, tightening of loose jumpers etc for normal terrain, vulnerable terrain and most vulnerable terrain adopting best O&M practices in compliance with the regulation 23 of the CEA (Grid standards), 2010.*
 - d. *Ensure availability of maintenance procedures for each equipment in line with the manufacturer's recommendations and prudent utility practices in compliance with regulation 20 of CEA (Grid standards), 2010.*
 - e. *Ensure strict compliance of regulation 12 (1) of CEA Grid Standards Regulations and IEGC provision under clause 5.2 (r) in promptly furnishing the detailed tripping report along with DR and EL output within 24 hours of the occurrence of the event.*



- f. *Implement the recommendations of Protection Audit Team of NERPC, which was submitted on Apr'13 and first phase of Third-Party Protection Audit in 2017.*
- g. *Implement Auto recloser scheme in 132 kV lines of DoP, Arunachal Pradesh as per section 43 (4) (c) of Central Electricity Authority (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations, 2010.*
- h. *Form their own expert group in protection audit for periodic protection audit of all sub-stations of 132 kV and above on continuous basis and discuss such Protection Audit Reports in the Protection Co-ordination sub-committee meeting of North Eastern Region.*
- i. *Form internal committee to verify whether actual maintenance works are carried out at site in compliance of the procedures and policy as per regulation 29 of the CEA Grid Standards Regulation,2010*
- j. *Ensure N-1 secure operation of Khupi area of Arunachal Pradesh Power System as per clause no. 6.2 of Central Electricity Authority (Manual on Transmission Planning Criteria), 2013 by upgradation of 33 kV Kameng – Khupi line to 132 kV level or any other alternative within 6 months.*
- k. *Issue appropriate direction/advice to the respondent for its failure to comply with the –*
 - a) *Regulation 3 (e), 12 (1) of the Central Electricity Authority (Grid Standards) Regulations, 2010*
 - b) *Regulation 5.1, 5.2 (e), 5.2 (l),5.2 (r), 5.9.6 (a) of the Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2010*
- ii. *NERPC may be directed to:*
 - a. *Validate relay settings of 132 kV elements in DoP, Arunachal Pradesh System and ensure its implementation.*
 - b. *Conduct Protection Audit of 132 kV Itanagar and Lekhi within 3 months*
 - c. *Organize Protection Sub-Committee meeting on quarterly or as and when required to address the issues of urgent nature as per Conduct of Business Rules*
- iii. *Pass such other order as the Hon'ble Commission deems fit and appropriate in the case and in the interest of the justice.*

Prayer in Petition No. 259/MP/2020

- i. *DoP, Nagaland may be directed to: -*
 - a. *Ensure proper protection system for all the elements connected at all sub-stations of 132 kV and above owned by DoP, Nagaland on priority basis say, within 3 months.*
 - b. *Ensure strict compliance of regulation 12 (1) of CEA Grid Standards Regulations and IEGC provision under clause 5.2 (r) in promptly furnishing the detailed tripping report along with DR and EL output within 24 hours of the occurrence of the event.*
 - c. *Implement the recommendations of Protection Audit Team of NERPC, which was submitted on Apr'13 and first phase of Third-Party Protection Audit in 2017.*
 - d. *Implement Auto re-closer scheme in 132 kV lines of DoP, Nagaland as per section 43 (4) (c) of Central Electricity Authority (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations, 2010.*
 - e. *Form their own expert group in protection audit for periodic protection audit of all sub-stations of 132 kV and above on continuous basis and discuss such Protection Audit Reports in the Protection Co-ordination sub-committee meeting of North Eastern Region.*
 - f. *Ensure and adopt proper and periodical preventive maintenance norms of substations and transmission lines including RoW clearance, jungle cutting, tightening of loose jumpers etc for normal terrain, vulnerable terrain and most vulnerable terrain adopting best O&M practices in compliance with the regulation 23 of the CEA (Grid standards), 2010.*

- g. *Ensure availability of maintenance procedures for each equipment in line with the manufacturer's recommendations and prudent utility practices in compliance with regulation 20 of CEA (Grid standards), 2010.*
- h. *Form internal committee to verify whether actual maintenance works are carried out at site in compliance of the procedures and policy as per Regulation 29 of the CEA Grid Standards Regulation,2010.*
- i. *Issue appropriate direction/advice to the respondent for its failure to comply with the -*
 - a) *Regulations 3 (e), 12 and 15 of the Central Electricity Authority (Grid Standards) Regulations, 2010*
 - b) *Regulations 5.1, 5.2 (e), 5.2 (l),5.2 (r), 5.9.6 (a) of the Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2010*
 - c) *Regulation 6 of Part 1 of CEA (Technical Standards for Connectivity to the Grid) Regulations 2007*
- ii. *NERPC may be directed to:*
 - a. *Validate relay settings of 132 kV elements in DoP, Nagaland and ensure its implementation.*
 - b. *Conduct Protection Audit of 132 kV Kohima, Wokha, Sanis and Mokokchung within 3 months.*
 - c. *Organize Protection Sub-Committee meeting on bimonthly or as and when required to address the issues of urgent nature as per Conduct of Business Rules.*
- iii. *Pass such other order as the Hon'ble Commission deems fit and appropriate in the case and in the interest of the justice.*

Prayer in Petition No. 539/MP/2020

- i. *MSPCL may be directed to: -*
 - a. *Ensure proper protection system for all the elements connected at all sub-stations of 132 kV and above owned by MSPCL within 3 months.*
 - b. *Ensure and adopt proper and periodical preventive maintenance norms of substations and transmission lines including RoW clearance, jungle cutting, tightening of loose jumpers etc. for normal terrain, vulnerable terrain and most vulnerable terrain adopting best O&M practices in compliance with the regulation 23 of the CEA (Grid standards), 2010.*
 - c. *Ensure availability of maintenance procedures for each equipment in line with the manufacturer's recommendations and prudent utility practices in compliance with regulation 20 of CEA (Grid standards), 2010.*
 - d. *Ensure strict compliance of regulation 12 (1) of CEA Grid Standards Regulations and IEGC provision under clause 5.2 (r) in promptly furnishing the detailed tripping report along with DR and EL output within 24 hours of the occurrence of the event.*
 - e. *Implement the recommendations of Protection Audit Team of NERPC, which was submitted on Apr'13 and first phase of Third-Party Protection Audit in 2017.*
 - f. *Implement Auto recloser scheme in 132 kV lines of MSPCL as per section 43 (4) (c) of Central Electricity Authority (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations, 2010.*
 - g. *Form their own expert group in protection audit for periodic protection audit of all sub-stations of 132 kV and above on continuous basis and discuss such Protection Audit Reports in the Protection Co-ordination sub-committee meeting of North Eastern Region.*

- h. *Form internal committee to verify whether actual maintenance works are carried out at site in compliance of the procedures and policy as per regulation 29 of the CEA Grid Standards Regulation,2010.*
 - i. *Issue appropriate direction/advice to the respondent for its failure to comply with the:*
 - i. *Regulation 3 (e) of the Central Electricity Authority (Grid Standards) Regulations, 2010*
 - ii. *Regulation 5.1, 5.2 (e), 5.2 (l), 5.2 (r), 5.9.6 (a) of the Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2010*
 - ii. *NERPC may be directed to:*
 - a. *Validate relay settings of 132 kV elements in MSPCL and ensure its implementation.*
 - b. *Conduct Protection Audit of 132 kV Imphal, Ningthoukhong, and Rengpang within 3 months.*
 - c. *Organize Protection Sub-Committee meeting on quarterly or as and when required to address the issues of urgent nature as per Conduct of Business Rules.*
 - iii. *Pass such other order as the Hon'ble Commission deems fit and appropriate in the case and in the interest of the justice.*
3. Petitioner has referred to the previous Order of the Commission vide Order dated 27.11.2015 in Petition No. 113/MP/2014, vide which it was held that constituents of NER should strictly comply with the provisions of the Grid Code and the Central Electricity Authority (Grid Standards) Regulations, 2010, to expeditiously complete the work identified as per third Party Protection Audit so that frequent tripping in their systems are eliminated and grid security is not endangered, and all STUs, distribution licensees and SLDCs of North Eastern Region (NER) to ensure that UFRs, df/dt and Islanding scheme are always functional in their systems and shall operate to provide adequate load relief as agreed in NERPC forum.

Submissions of Petitioner in Petition No. 198/MP/2020:

4. Petitioner has made the following submissions:
- a) In the 34th Protection Coordination Sub-committee (PCC) meeting held on 16th June 2015, the issues related to the submission of the status of third-party protection audit and rectification of protection system deficiency (implementation of R&U & R&M works) were discussed. The Sub-committee(s) requested DoP (Arunachal Pradesh) to submit the status of progress works to NERPC regularly so that the same could be intimated to CERC. However, DoP Arunachal Pradesh has not submitted the status of the implementation of recommendations of Third Part Protection Audit and implementation of R&M works even after more than 4 years, which is a great concern from a system security point of view

- b) There were at least 65 numbers of Grid Disturbances of Category GD-I and 1 number of Grid Disturbance of Category GD-II from November 2018 to October 2019. Many of the disturbances were either due to the ineffectiveness of O&M practices, delayed fault clearance, downstream fault, unwanted operation or failure of operation of protective relays; in effect, reflecting the ineffectiveness of protection schemes. Tripping of certain lines for a period w.e.f. 01.11.18 to 31.11.19 indicate ineffectiveness of O&M practices, like regular patrolling, jungle cutting, jumper tightening, substation equipment & proper relay testing etc., followed by DoP, Arunachal Pradesh.
- c) Month wise and Year wise break up of disturbance are as under:

Month wise break up of disturbance

Month	GD Count	Month	GD Count	Month	GD Count
Nov-18	3	Mar-19	7	Jul-19	5
Dec-18	0	Apr-19	6	Aug-19	7
Jan-19	1	May-19	7	Sep-19	9
Feb-19	0	Jun-19	8	Oct-19	13

Year wise break up of disturbance

Year	GD Count	Year	GD Count
2016	51	2018	56
2017	36	2019	63

- d) As per the status of Renovation & Upgradation (R&U) scheme of DoP Arunachal Pradesh as per the 161st OCC Meeting dated 22nd October 2019, it is seen that Renovation & Upgradation works of DoP Arunachal Pradesh has not yet started even after 3 years of the signing of the agreement.
- e) Auto recloser scheme is not implemented in 132 kV lines of DoP, Arunachal Pradesh which violates the Schedule-V Section 43 (4) (c) of Central Electricity Authority (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations, 2010.
- f) As per recommendations of the Enquiry Committee on Grid Disturbances, it was decided in the 47th PCC Meeting to carry out 3rd party protection audit starting from

1st week of Aug'17 covering 1/3rd of NER substations. In the 52nd PCC Meeting, DoP, Arunachal Pradesh informed that the compliance status of the protection audit would be submitted by 15.01.19. In the subgroup meeting of NERPC held on 05.04.19 & subgroup meeting of NERPC held on 07.08.19, the status could not be updated due to no representation from DoP, Arunachal Pradesh.

- g) There were 3 instances of Grid Disturbances where power supply to the Capital area (in Sep'19), Lekhi area (in Oct'19), Khupi area along with Dikshi Power station (in Oct'19) and Daporijo area (in June'19 and Oct'19) of Arunachal Pradesh was affected. The root cause of the mentioned events was not concluded due to the non-submission of the analysis report, DR & EL outputs and First-time information report by DoP, Arunachal Pradesh to NERLDC which is a violation of Regulation 5.2(r) of Grid Code & Regulation 12 of Grid Standards. Further, the UFR operation report was also not submitted by the DoP, Arunachal Pradesh.
- h) The Khupi area of Arunachal Pradesh is not N-1 secure as per clause no. 6.2 of Central Electricity Authority (Manual on Transmission Planning Criteria), 2013. Tripping of this line resulted in Grid Disturbances in the Khupi area along with the Dikshi generation of Arunachal Pradesh.
- i) It is observed that DoP Arunachal Pradesh is not attending the PCC Meetings regularly due to which events pertaining to the Arunachal Pradesh Power System could not be discussed.

Submissions of Petitioner in Petition No. 259/MP/2020

5. Petitioner has made the following submissions:

- a) The protection system of DoP (Nagaland) has been in an appalling condition for a long time, resulting in frequent power supply interruptions to the capital part of the Kohima area and also loss of Likhimro generation; as a result, there is a reduction in power availability in NER.
- b) The number of Grid disturbances in the Nagaland system of NER during the past four years are tabled below:

Year	2016	2017	2018	2019
GD Count	70	82	63	28

- c) There were at least 28 (Twenty-Eight) numbers of Grid Disturbances of Category GD-I during the year 2019 in the Nagaland Power System alone as tabled below:

Month	GD Count	Month	GD Count	Month	GD Count
Jan-19	00	May-19	01	Sep-19	02
Feb-19	01	Jun-19	08	Oct-19	0
Mar-19	02	Jul-19	05	Nov-19	0
Apr-19	07	Aug-19	02	Dec-19	0

- d) Many of the disturbances were either due to the ineffectiveness of O&M practices, delayed fault clearance, downstream fault, unwanted operation or failure of operation of protective relays, in effect reflecting the ineffectiveness of protection schemes. There were cases of tripping of multiple lines at ISTS/ISGS nodes due to non-operation/mal-operation of the protection system of Mokokchung and Sanis sub-station of DoP (Nagaland).
- e) Out of these disturbances, power supply to the Capital (Kohima) area (comprising a downstream load of 132 kV Buses of Kohima, Meluri & Kiphiri substations) was affected in 21 (Twenty one) cases, Dimapur area (comprising of downstream load of 132 kV Bus of Dimapur (DoP Nagaland) substation) was affected in 03 (Three) cases, Mokokchung area (comprising of downstream load of 132 kV Bus of Mokokchung (DoP Nagaland) substation) was affected in 04 (Four) cases.
- f) The Auto recloser scheme has not been implemented in 132 kV Dimapur (PG)-Dimapur (DoP,,Nagaland) - 1&2, 132 kV Dimapur (PG)-Kohima, 132 kV Doyang-Mokokchung (DoP, Nagaland) and 132 kV Doyang-Sanis line of DoP (Nagaland) which violates the Section 43(4)(c) of Central Electricity Authority (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations, 2010.
- g) The fault clearing time, as per PMU analysis, is seen to be more than 160 milliseconds in many of the grid disturbances in 2019, which is a violation of Regulation 3 of Grid Standards.
- h) In the 53rd PCC Meeting, DoP Nagaland informed that the compliance status of the protection audit would be submitted by 15.01.19. In the subgroup meeting of NERPC held on 05.04.19 and the subgroup meeting of NERPC held on 05.11.19,

the status could not be updated since there was no representation from DoP, Nagaland.

- i) The detailed root cause analysis of most of the grid events could not be done due to the non-submission of DR and EL outputs. First-time information report by DoP, Nagaland to NERLDC, which is a violation of Regulation 5.2(r), Regulation 5.9.6 (a) and (c) of the Grid Code and Regulation 12 (1) and 15 of Grid Standards.
- j) DoP Nagaland is not attending the Protection Coordination sub-Committee Meetings regularly, due to which events pertaining to the Nagaland Power System could not be discussed.

Submissions of Petitioner in Petition No. 539/MP/2020

6. Petitioner has made the following submissions:

- a) The protection system of Manipur State Power Company Limited (MSPCL) has been in an appalling condition since long, resulting in frequent power supply interruptions to the capital part of the Imphal area. As a result, there is a reduction in power availability in NER.
- b) The number of Grid disturbances in the Manipur system of NER during the past four years are tabled below:

Year	2016	2017	2018	2019	2020 (till May)
GD Count	45	37	27	32	13

- c) There were at least 66 (Sixty-Six) numbers of Grid Disturbances of Category GD-I from September 2018 to May 2020 in Manipur Power System alone as tabled below:

Month	GD Count	Month	GD Count	Month	GD Count
Sep-18	13	Apr-19	05	Nov-19	05
Oct-18	08	May-19	0	Dec-19	04
Nov-18	03	Jun-19	04	Jan-20	04
Dec-18	01	Jul-19	0	Feb-20	0
Jan-19	03	Aug-19	0	Mar-20	07
Feb-19	04	Sep-19	0	Apr-20	01
Mar-19	01	Oct-19	02	May-20	01

- d) Many of the disturbances were either due to ineffectiveness of O&M practices like regular patrolling, jungle cutting, jumper tightening, substation equipment & proper relay testing etc., delayed fault clearance, downstream fault, unwanted operation or failure of operation of protective relays, in effect reflecting ineffectiveness of protection schemes.
- e) The Rengpang and Ningthoukhong areas of the Manipur Power System is not N-1 secure, which is a violation of clause 6.2 of Central Electricity Authority (Manual on Transmission Planning Criteria), 2013, and consequently, tripping of this line has resulted in Grid Disturbances.
- f) Out of these disturbances, power supply to Capital (Imphal) area (comprises a downstream load of 132 kV Buses of Imphal, Yangangpokpi, Hundung & Kongba substations) was affected in 10 (Ten) cases, Ningthoukhong area (comprises a downstream load of 132 kV Buses of Ningthoukhong, Churachandpur, Elangpokpi & Kakching substations) was affected in 33 (Thirty-Three) cases, Karong area (comprises the downstream load of 132 kV Bus of Karong substation) was affected in 05 (Five) cases and Jiribam area was affected in 01 (One) cases.
- g) The Auto recloser scheme is not implemented in 132 kV lines of MSPCL, which violates section 43(4)(c) of Central Electricity Authority (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations, 2010.
- h) The root cause of incidents was not concluded due to the non-submission of an analysis report, DR & EL outputs and First-time information report by MSPCL to NERLDC, which is a violation of Regulation 5.2(r) of Grid Code & Regulation 12 of Grid Standards. Further, the UFR operation report is also not submitted by the MSPCL.
- i) The fault clearing time as per PMU analysis is seen to be more than 160 milliseconds in most of the grid disturbances (41 times) till May 2020, which is a violation of Regulation (3) of Grid Standards.

Hearing on 14.07.2020 in Petition No. 198/MP/2020 and 259/MP/2020

- 7. Petition No. 198/MP/2020 and 259/MP/2020 were admitted on 14.07.2020, and Petitioner was directed to implead the concerned SLDCs as a party to the respective Petition and to file an amended memo of parties.

8. Petitioner in Petition No. 198/MP/2020 on 20.07.2020 has filed an “Amended Memo of parties” impleading Superintending Engineer (E), SO & PSC, SLDC Arunachal Pradesh as a party to the Petition.
9. Petitioner in Petition No. 259/MP/2020 on 20.07.2020 has filed an “Amended Memo of parties” impleading Executive Engineer (Transmission), SLDC Nagaland as a party to the Petition.

Hearing on 22.04.2021 in Petition No. 539/MP/2020

10. Petition No. 539/MP/2020 was admitted on 22.04.2021, and Petitioner was directed to implead the Managing Director, Manipur State Power Company Limited as a party to the Petition and to file an amended memo of parties.
11. Petitioner in Petition No. 539/MP/2020 on 03.05.2021 has filed an “Amended Memo of parties” impleading Managing Director, Manipur State Power Company Limited (MSPCL) as party to the Petition.

Submission of Respondent in Petition No. 539/MP/2020

12. SLDC, MSPCL has submitted as follows:
 - a) The number of grid incidents, in general, got reduced during the years: 2016 to 2019.
 - b) Rengpang is connected via 132 kV Loktak – Rengpang & 132 kV Jiribam – Rengpang Transmission line & fulfils N-1 condition, but this is not operationalized due to some issues like falling of towers due to mudslide, and the ongoing works of shifting of lines due to construction of railway lines. MSPCL is all set to rectify on completion of the ongoing works of shifting and erection of towers.
 - c) Ningthoukhong, it is connected through 132 kV Loktak – Ningthoukhong & Ningthoukhong – Imphal (PG) satisfying N-1 criterion. Subsequent to the charging 400 kV Silchar – Imphal (PG) D/C line in December 2018, the system has been put in the loop since January 2019 & is fully operational, enhancing the reliability of power.
 - d) MSPCL did take remedial actions as advised. It is mentioned that 70% of the state grid passes through hilly terrain, which is prone to hill slides & is difficult to approach in case of occurrence of any fault. Again, the exuberant growth of bamboo in the

hilly areas of the State aggravates the situation. Nonetheless, regular vegetation clearance is being conducted.

- e) The numerical relays, new circuit breakers, etc. are in place with the implementation of the Renovation and Upgradation (R&U) scheme with funds from PSDF and Implementation of the ARC scheme is ongoing.
- f) Based on the recommendation of the third party protection audit (conducted during the year 2013-14), DPR was submitted and funds were sanctioned from PSDF for renovation and upgradation (R&U) of 9 No. of 132/33kV substations in Manipur. The R&U work in the state is in the final stages of Completion. Further, in 2016-17 the next phase of third party protection audit of NER substations was carried out and completed on 9-11-2017.
- g) Representatives of MSPCL attend the Sub-group meetings, and the recommendations are strictly followed and implemented.
- h) MSPCL follows instructions and guidelines on the operation and maintenance of systems as per CEA guidelines and standards. Any outstanding issues and any other O&M issues are being taken up in different fora and actions are taken up by MSPCL to mitigate the same to enhance grid security and reliability.
- i) For every grid incident, SLDC submits FIR to RLDC within the timeline as specified in Grid Code and Grid Standards, DR & EL reports are forwarded to RLDC as and when received at SLDC end. Due to some logistic issues such as the non-availability of appropriate software and Laptops, DR & EL records were not furnished with respect to the incidents for the period mentioned. Now, Laptops issued by NERPC for SEM data Collection are loaded with compatible software wherever possible and issued to Substations on 30th July 2019 except in the case of 132/33 KV Tipaimukh Substation where the issue of software existed. This issue is also being resolved during this month. Sub-station Staff were also given hands-on training in this regard for familiarization.
- j) An internal committee headed by ED (Tech) is formed to verify whether actual maintenance work is carried out at the site in compliance with the procedure and policies as per Grid Standards and an expert group on protection application is also formed under General Manager (Substation) and DGM (SSD-II) as nodal officer.

Submission of Petitioner in Petition No. 198/MP/2020

13. Petitioner vide affidavit dated 09.03.2023 has submitted reply to details sought by the Commission vide ROP dated 16.02.2023 as follows:
- a) The important stations in Arunachal Pradesh that are connected to ISTS network or impact the ISTS grid have been identified as Itanagar, Daporijo, Aalong, Pasighat, Lekhi, Tenga, Khupi and Deomali.
 - b) None of the sub-station in in Arunachal Pradesh (including the stations identified as impacting the ISTS grid) have implemented the Auto re-closer scheme.
 - c) Data on a number of repeated tripping of ISTS connected elements show that most of the tripping has resulted due to solid/metallic fault. In most of the remaining tripping, the reason for tripping cannot be analyzed/concluded and the root cause can be ascertained due to non-submission of DR and EL or wrong DR and EL being submitted.
 - d) From the FIR, DR and EL submission status in 2022, it is evident that 100% submission of DR and EL reports is not achieved for some of the important stations in Arunachal Pradesh.

Submission of Petitioner in Petition No. 259/MP/2020

14. Petitioner vide affidavit dated 09.03.2023 has submitted as follows:
- a) The important stations in Nagaland that are connected to ISTS network or impact the ISTS grid have been identified as Dimapur, Kohima, Mokokchung, Sanis, Chimpubozou, Wokha, Meluri and Kiphire.
 - b) None of the sub-stations in Nagaland (including the stations identified as impacting the ISTS grid) have implemented the Auto re-closer scheme.
 - c) Data on a number of repeated tripping of ISTS connected elements show that most of the tripping has resulted due to solid/metallic fault. In most of the remaining tripping, the reason for tripping cannot be analyzed/concluded and the root cause cannot be ascertained due to non-submission of DR and EL or wrong DR and EL being submitted.

Submission of Petitioner in Petition No. 539/MP/2020

15. Petitioner vide affidavit dated 06.04.2023 has submitted the reply to details sought vide ROP dated 27.03.2023, as follows:
- a) The important stations in Manipur that are connected to the ISTS network or impact the ISTS grid have been identified as Imphal, Karong, Ningthoukhong, Rengpang, Tipaimukh, Jiribam, Churachandpur, Kakching, New Thoubal, Kongba and Yaingangpokpi.
 - b) None of the sub-stations in Manipur (including the stations identified as impacting the ISTS grid) have implemented the Auto re-closer scheme.
 - c) Data on a number of repeated tripping of ISTS connected elements show that most of the tripping has resulted due to solid/metallic fault. In most of the remaining tripping, the reason for tripping cannot be analyzed/concluded and the root cause cannot be ascertained due to non-submission of DR and EL or wrong DR and EL being submitted.

Hearing on 25.04.2023 in Petition No. 198/MP/2020 and 259/MP/2020

16. Petition No. 198/MP/2020 and Petition No. 259/MP/2020 were reserved for order on hearing held on 25.04.2023. Petitioner and Respondents, namely the Department of Power, Arunachal Pradesh and Nagaland, were directed to conduct a meeting within two weeks and formulate an implementation plan along with a timeline (priority-wise) for implementation of the protection system at the sub-stations identified by the Petitioner in compliance with the Grid Standards and Grid Code and submit the same.

Submission of Respondent in Petition No. 259/MP/2020

17. Department of Power, Nagaland, vide affidavit dated 05.05.2023 has submitted as follows:
- a) Preventive maintenance of Sub-Stations and Transmission lines is an ongoing process adopted by the Department of Power. Nagaland being a hilly terrain and the transmission lines passing through thick vegetation, the tripping do occur in spite of our best practices & efforts. The problem is compounded during heavy rains accompanied by high turbulence, resulting in the falling of trees and bamboo. And that the Department is regularly undertaking extensive vegetation clearance in order to avoid/minimize such unwanted trippings.

- b) DoP Nagaland has started compulsory monthly line patrolling as a preventive measure since April 2022. The critical and long transmission lines have been re-sectionalized and assigned to field officers with shorter lines for better management and quicker response to any incidents.
- c) The 132kV Dimapur-Kohima-Karong transmission line was constructed way back in the 1980s , and has already lived its useful life, due to which snapping of conductors and failure of insulators are frequent. The survey for re- conductoring and replacement of insulators for the said transmission line has been completed and DPR is under preparation for submission to PSDF for funding.
- d) For the 132kV Karong-Kohima line, backup settings were reviewed and implemented on 02.03.2022 in coordination with NERLDC.
- e) Relay replaced at Doyang end for 132kV Doyang-Sanis in June'2020 and new settings implemented.
- f) Backup relay settings for 132KV DHEP were done on 27th July 2021 as per the recommendation of NERLDC. ICT setting including the healthiness of the Protection System was done on 6th August 2022
- g) The department is initiating for implementation of the Auto- Reclosure scheme.
- h) Based on the recommendations of the 2013-14 audit, carried out in NER on 2013-14, DPR was prepared & fund sanctioned from PSDF for Renovation & Upgradation (R&U) of Sub-Stations in the entire NER. The R&U works in NER including sub-stations of DoP Nagaland have been completed. In 2017-18, the next phase of theThird-Party protection audit was carried out, and recommendations were circulated to all utilities for further action. DoP Nagaland has already implemented the recommendations.
- i) DR and EL are being submitted to NERLDC as per regulation. The latest submission status for the period from 1st March 2023 to 2nd May 2023 for both DR and EL is 94%, which shows that with respect to the submission of DR and EL, the performance of Nagaland has significantly improved.
- j) The DoP Nagaland has been attending the PCC meetings very regularly in the past few years. O&M issues pertaining to NER Grid are regularly taken up in different forums and mitigated accordingly. If the petitioner feels any deviation from standard norms the same may be raised in NERPC forums for quick resolution of the same.

18. Department of Power, Nagaland vide affidavit dated 12.05.2023 in Petition No.259/MP/2020, has submitted as follows:

- a) On 02.05.2023, a meeting was held between NERLDC (Grid-India) and the Department of Power, Nagaland, as per CERC direction for formulating a time bound action plan for implementation of the protection system in compliance with the Grid Standards and Grid Code. The relevant extract of the Minutes of Meeting (MoM) are as under:

"1. NERLDC has identified the following important stations in Nagaland that are connected to the ISTS/ISGS network or impacting the ISTS grid:

- i. Dimapur*
- ii. Capital (Kohima)*
- iii. Mokokchung*
- iv. Sanis*
- v. Chiephobozou*
- vi. Wokha*
- vii. Meluri*
- viii. Kiphire*

In these Sub-stations, Timeline for maintenance of proper protection system healthiness to be provided by Nagaland.

2. DR & EL Submission: *Presently DR & EL submission is below 70 % for DoP, Nagaland. Also, very less number DR & EL (below 40%) submitted for tripping at Sanis & Wokha SS. - In this regards it was enquired by NERLDC whether there is any problem being faced by Nagaland in submitting 100% DR& EL to which it was pointed out by representative from Nagaland that they are making necessary efforts to ensure timely submission of DR &EL. However, for stations like Wokha, Sanis, Kiphire and Meluri which are very far, it is hard to go and collect data.*

-A time bound action plan for achieving 100% DR &EL submission to be provided by Nagaland.

3. Grid Disturbance due to Protection Issues:

- NERLDC pointed out that in Kohima, out of 14 GD"s recorded in 2022, 07 numbers of GDs are due to protection related issues like unwanted relay operation/non-opening of CB. Further, in Dimapur (NA), huge load loss observed due to not clearing of fault at the downstream of Nagaland system.

- Representative from Nagaland stated that Kohimo Sub- Station is very old and there is problem in relay panel. The mis-operation of protection system was mainly due to DC supply issue. The termination board has been cleaned and the DC supply has also been tightened. Accordingly, the issue pertaining to relay operation/ non-opening of CB is now resolved.

- A time bound action plan for resolving all existing protection related issues, if any, in all important substations of Nagaland to be provided by Nagaland.

4. Autorcloser Implementation in DoP, Nagaland System:

- Few lines have already been identified by PCC meeting of NERPC for AR implementation.

- NERLDC enquired whether there is availability of the prerequisites (PLCC or Optical Fibre Comm. etc) of the identified lines.

- It was stated by representative from Nagaland that in the last 58th PCCM, it has been decided to implement the 132 kV Dimapur- Kohima in the first phase. PLCC is available and timelines for implementation of AR scheme in these lines will be provided by Nagaland after discussion with the Head Office.

5. Frequent tripping of lines:

Timeline for adopting proper and periodical preventive maintenance norms of substations and transmission lines including RoW clearance, jungle Cutting, tightening of loose jumpers etc for normal terrain, vulnerable terrain and most vulnerable terrain adopting best O&M practices for the following important lines is to be provided by Nagaland.

Name of line	Tripping in 2022
132KV Dimapur(PG)-Kohima Line	34
132KV Doyang-Mokokchung (DoP, Nagaland) Line	15
132KV Kohima- Meluri Line	14
132KV Sanis- Wokha Line	13
132KV Kohima-Wokha Line	14
132KV Chiephobozou-Wokha Line	10
132KV Kohima-Chiephobozou Line	15

6. Third party Protection Audit in DoP, Nagaland owned SS:

- Last 3rd party audit was conducted in 2017-18. As per 55th PCCM, 81% of the recommendations are implemented. NERLDC requested for Nagaland to share the detail report for implementation of the recommendations.

Also, timelines for completing the implementation of remaining 19-20% of recommendations of the 2017-18 audit and timeline for conducting the next audit plan for Sanis, Wokha, Kiphire and Kohima SS is to be provided by Nagaland.

7. NERLDC recommended to form own expert group in protection audit that would also include SLDC personnel for periodic protection audit of all sub-stations of 132 kV and above on continuous basis and discuss such Protection Audit Reports in the Protection Co-ordination sub-committee meeting of North Eastern Region.

Representative from Nagaland will provide timeline for forming such expert group after discussing with higher officials.

8. Time bound action plan to be provided by Nagaland for ensuring availability of maintenance procedures for each equipment in line with the manufacturer's recommendations and prudent utility practices in compliance with regulation 20 of CEA Grid standards), 2010.

9. Time bound action plan to be provided by Nagaland for forming internal committee to verify whether actual maintenance works are carried out at site in compliance of the procedures and policy as per Regulation 29 of the CEA Grid Standards Regulation, 2010

The time-bound action plan for the points mentioned above will be submitted to CERC by Nagaland within 2 (two) weeks."

- b) The following timeline has been submitted by the Department of Power, Nagaland in accordance with the Minutes of the Meeting held on 02.05.2023:
- Protection system for all the elements connected at all sub-stations of 132kV and above connected to the ISTS Grid or impacting the ISTS grid will be ensured to be implemented within 1 (one) year, that is by May 2024 as far as possible.
 - Timeline for compliance of 100% timely submission of available DR and EL data will be within May and June 2023 for different sub-stations.

- iii. Issues pertaining to protection issues have been attended to and duly rectified by DoP Nagaland.
- iv. For the following lines for the Auto-reclosure will be implemented by March 2024.
 1. 132kV Dimapur (PG)- Dimapur (NA) 1,
 2. 132kV Dimapur (PG)- Dimapur (NA) 2,
 3. 132kV Dimapur (PG)- Kohima,
 4. 132kV Doyang – Mokokchung,
 5. 132kV Doyang – Sanis.
- v. The department is regularly undertaking extensive vegetation clearance in order to avoid/minimize such unwanted trippings . DoP Nagaland has started compulsory monthly line patrolling as a preventive measure since April 2022, and monthly patrolling reports are being submitted to NERLDC and NERPC. The critical and long transmission lines have been re-sectionalized and assigned to field officers with shorter lines for better maintenance and quicker response to any incidents.
- vi. The 132kV Dimapur-Kohima-Karong transmission line was constructed way back in the 1980s, and has already lived its useful life, due to which snapping of conductors and failure of insulators are frequent. The survey for re-conductoring and replacement of insulators for the said transmission line has been completed, and DPR is under preparation for submission to PSDF for funding. The Department shall complete the implementation of this work within 36 months from the date of sanction by PSDF.
- vii. Issues pertaining to Third Party Protection Audit has been tabulated below:

Particulars	Compliance Status	Remarks	Timeline for 100%
Third-party Audit Compliance Report 2017-18	81%	The petitioner may kindly submit the details of the compliance /non-compliance status of the third-party audit report 2017-18 so that the respondent can take necessary remedial measures.	The timeline cannot be submitted now due to the non-availability of the non-compliance /compliance details.
Next Audit plan at 132KV Wokha, 132KV Sanis, 132KV Kiphire & Kohima as per last 58 PCC minutes	-	DOPN has proposed the third-party audit on June 2023 during the Protection Sub-Group meeting held on 4 th May 2023	The timeline can be submitted only after the audit is carried out and details are obtained.

- viii. DoP Nagaland will form an expert group in protection audit for periodic protection audit of all sub-stations of 132kV and above on a continuous basis and discuss such Protection Audit Reports in the Protection Co-ordination Sub-committee meeting of North Eastern Region within May 2023.
- ix. DoP Nagaland will ensure the availability of maintenance procedures for each equipment in line with the manufacturer's recommendations and prudent utility practices in compliance with regulation 20 of CEA (Grid standards), 2010, within July 2023.
- x. DoP Nagaland will form an internal committee to verify whether actual maintenance works are carried out at site in compliance with the procedures and policy as per Regulation 29 of the CEA Grid Standards Regulation, 2010, within May 2023.

Hearing on 23.08.2023 in Petition No. 539/MP/2020

19. Petition No. 539/MP/2020 was reserved for order on hearing held on 23.08.2023. The Petitioner and the Respondents were to conduct a meeting within a month and to formulate an implementation plan along with a mutually agreed timeline (priority-wise) for the implementation of the protection system at the substations identified by the Petitioner in compliance with the Grid Standards and Grid Code and submit the same.

Submissions by Respondent in Petition No. 539/MP/2020

20. MSPCL vide affidavit dated 13.10.2023 has submitted the following timelines for the different actions:
 - a) To reduce the Grid Disturbances at Tipaimukh, Karong and Churachandpur Substations – May 2024
 - b) To achieve 100% submission of the FIR, DR and EL for the substations impacting the ISTS network – 6 to 8 months.
 - c) To address the Protection issues at Karong, Ningthoukhong, and Tipaimukh - March 2024
 - d) Implementation of the AR in the Manipur system - June 2024.

- e) Compliance with the recommendation of third-party audit for 2013-14 and 2017-18 - 10-12 months. Further, as per the PCC meeting the next audit has been scheduled for April 2024.
- f) Formation of own expert group for periodic protection audit - 6 months
- g) Formation of internal committee to verify the maintenance - 6 months
- h) To ensure availability of maintenance procedure for each equipment in line with the manufacturer's recommendations and prudent utility practices in compliance with regulation 20 of CEA (Grid Standards), 2010 - 6 months.
- i) To resolve the multiple/repeated tripping - March, 2024

Analysis and Decision:

21. We have considered the submissions of the Petitioner and the Respondents and also perused the relevant provisions of the Act, the Grid Standards, Central Electricity Authority (Manual on Transmission Planning Criteria) and the Grid Code. The main issue raised by the Petitioner NERLDC, through these Petitions, is to seek directions to the Respondents for providing protection systems having reliability, selectivity, speed and sensitivity and keeping them functional in terms of Regulation 5.2 (l) of the Grid Code read with Regulation 3 (e) of the Grid Standards, ensuring proper inspection & patrolling and maintenance of substations and lines in terms of Regulation 5 read along with Regulation 23 & Regulation 24 of the Grid Standards for ensuring the security of the North Eastern Grid as well as the interconnected Indian Grid and reliable operation as per Clause 6.2 of Central Electricity Authority (Manual on Transmission Planning Criteria), 2013.
22. Petitioner has submitted that there were at least 65 numbers of Grid Disturbances of Category GD-I and 1 number of Grid Disturbance of Category GD-II from November 2018 to October 2019 in the Arunachal Pradesh Power System and out of these disturbances, power supply to the Capital area (in Sep'19), Lekhi area (in Oct'19), Khupi area along with Dikshi Power station (in Oct'19) and Daporijo area (in June'19 and Oct'19) of Arunachal Pradesh was affected in 3 instances.

There were at least 28 (Twenty-Eight) numbers of Grid Disturbances of Category GD-I during the year 2019 in Nagaland Power System and out of these disturbances, power supply to the Capital (Kohima) area was affected in 21 (Twenty

one) cases, Dimapur area was affected in 03 (Three) cases, Mokokchung area in 04(Four) cases.

Similarly, there were at least 66 (Sixty-Six) numbers of Grid Disturbances of Category GD-I from September 2018 to May 2020 in the Manipur Power System and out of these disturbances, power supply to the Capital (Imphal) area was affected in 10 (Ten) cases, Ningthoukhong area was affected in 33 (Thirty-Three) cases, Karong area was affected in 05 (Five) cases and Jiribam area of Manipur Power System was affected in 01 (One) cases.

Many of these disturbances were either due to delayed fault clearance, downstream fault, unwanted operation or failure of operation of protective relays, ineffectiveness of O&M practices like regular patrolling, jungle cutting, jumper tightening, substation equipment & proper relay testing etc.; in effect reflecting ineffectiveness of protection schemes. Petitioner has pointed out issues related to the Auto recloser scheme and non-reporting by Disturbance recorder (DR) and Event logger (EL) in the States of Arunachal Pradesh, Nagaland and Manipur.

23. MSPCL has submitted that remedial actions, as advised, have been taken by MSPCL, and regular vegetation clearance is also carried out. The numerical relays, new circuit breakers, etc. are in place with the implementation of the Renovation and Upgradation (R&U) scheme and implementation of the Auto-reclose scheme is ongoing. MSPCL has also submitted that an internal committee headed by ED (Tech) is formed to verify the maintenance work carried out at site, and an expert group on protection application is also formed under the General Manager (Substation) and DGM (SSD-II) as nodal officer.
24. The Department of Power (DoP), Nagaland has submitted that Preventive maintenance of Sub-Stations & Transmission lines is an ongoing process adopted by the Department of Power and DoP Nagaland has started compulsory monthly line patrolling as a preventive measure since April 2022. Further, the survey for re-conductoring and replacement of insulators for the 132kV Dimapur-Kohima-Karong transmission line, which was constructed way back in the 1980s s, has been completed and DPR is under preparation for submission to PSDF for funding. DoP Nagaland has also submitted that the Relay has been replaced at the Doyang end for 132kV Doyang-Sanis in June'2020, Backup relay settings for 132KV DHEP were

done on 27th July 2021 as per recommendation of NERLDC, ICT setting including healthiness of Protection System was done on 6th August 2022, Department is initiating steps for implementation of the Auto- Reclosure and further the R&U works in NER including sub-stations of DoP Nagaland has been completed and the performance of the submission of DR & EL has been significantly improved.

25. We have considered the submissions of the Petitioner and Respondents and have also perused relevant sections of the Act, the Grid Standards, Central Electricity Authority (Manual on Transmission Planning Criteria) and the Grid Code.
26. We observe that the non-availability of a proper Protection System at the grid-connected sub-stations and the non-practicing of periodical preventive maintenance of sub-stations and transmission lines are serious concerns for the safe, secure and reliable operation of the grid. As the matter is about safety and security of the grid operation, the Commission is of the view that such issues should be taken very seriously. In the absence of a proper Protection System, any mishap in the grid may have a catastrophic effect on the grid. Therefore, there is an imperative need for all the users to establish a Protection System having reliability, selectivity, speed and sensitivity along with ensuring proper inspection & patrolling and maintenance of substation and transmission lines and adoption of best O&M practices, in strict compliance with the Grid Code and Grid Standards, so that the power system can be operated in a safe, secure and reliable manner.
27. We note that the Respondent Department of Power, Nagaland under Petition No. 259/MP/2020, has conducted a meeting with NERLDC and accordingly has submitted the timeline for implementation of the protection system at the sub-stations as identified by the Petitioner. We also note that the Respondent MSPCL under the Petition No. 539/MP/2020 has not submitted any information on conducting the meeting with NERLDC. However, MSPCL has submitted the timeline for implementation of the protection system at the sub-stations as identified by the Petitioner. We note that the Department of Power, Nagaland and SLDC, MSPCL have also taken various steps and implemented a Renovation and Upgradation (R&U) scheme to reduce the grid disturbances and to improve the protection system of their associated transmission system. We also note that SLDC, and MSPCL have

formed their own protection expert group under the General Manager (Substation) and DGM (SSD-II) as nodal officers and also formed internal monitoring committee headed by ED (Tech) to verify the maintenance works.

28. We note that the Department of Power, Arunachal Pradesh under Petition No. 198/MP/2020, has not made any submissions in the matter including its views about the meeting with NERLDC. The Commission expresses its displeasure at such a casual approach of the Respondents, especially when the matter is related to the safety and security of the Grid.
29. Considering the above, we direct the following:
- a) The Department of Power, Arunachal Pradesh, shall conduct a meeting with NERLDC within a month of issuance of this order to finalize the timelines for compliance with the various issues brought out by the petitioner.
 - b) The Department of Power, Arunachal Pradesh; the Department of Power, Nagaland; and MSPCL shall implement proper protection system inter-alia including proper relay setting, and Auto-recloser scheme, and shall also ensure healthiness & smooth functioning of these systems at the substations identified by the petitioner, in strict compliance with the provisions under the Grid Code and Grid Standards.
 - c) The Department of Power, Arunachal Pradesh, the Department of Power, Nagaland and MSPCL shall practice periodic preventive maintenance of the associated transmission system at the substations and the transmission lines identified by the petitioner, in strict compliance with the provisions under the Grid Code and Grid Standards.
 - d) The Department of Power, Arunachal Pradesh shall ensure proper execution and implementation of Renovation and Upgradation (R&U) work sanctioned under PSDF.
 - e) The Department of Power, Arunachal Pradesh, the Department of Power, Nagaland and MSPCL shall ensure the availability of maintenance procedures for each equipment in line with the manufacturer's recommendations and prudent utility practices in compliance with the Grid standards.

- f) The Department of Power, Arunachal Pradesh, The Department of Power, Nagaland and MSPCL shall furnish detailed tripping reports including disturbance recorder (DR) and event logger (EL) output to NERLDC in strict compliance with Regulation 12 (1) of Grid Standards and Regulation 5.2 (r) provisions of the Grid Code.
- g) The Department of Power, Arunachal Pradesh, Department of Power, Nagaland and MSPCL shall implement the recommendations of the Protection Audit Team of NERPC.
- h) The Department of Power, Arunachal Pradesh and the Department of Power, Nagaland to form their own expert group to perform periodic protection audits at the associated transmission system of the respective respondent and also to form an internal committee for monitoring the maintenance works.
- i) The Department of Power, Arunachal Pradesh shall ensure N-1 secure operation of the Khupi area of Arunachal Pradesh Power System as per clause no. 6.2 of Central Electricity Authority (Manual on Transmission Planning Criteria), 2013 in coordination with the Petitioner.
- j) The Department of Power, Nagaland and MSPCL shall adhere to the timelines mentioned in Paragraph 18(b) and in Paragraph 20 of this Order, respectively, for the implementation of protection system in their respective areas.
- k) NERPC shall monitor the work of the implementation of the Protection system by the Department of Power, Arunachal Pradesh; Department of Power, Nagaland; and MSPCL and shall submit a quarterly progress report to the Commission till the establishment of the Protection system at the substations identified by the NERLDC. NERPC shall validate relay settings and conduct the Protection Audit of the associated transmission system at the substation and transmission lines, as and when required. Any issue faced during the implementation of Protection system or observed during the protection audit shall be discussed in the Protection Sub-Committee meeting at the RPC forum and sorted out.
- l) NERLDC shall monitor the establishment & maintenance of the Protection system by the users of the North-Eastern Region and update the status every month on their website till the establishment of the Protection system at the substations identified by the NERLDC.

m) The Department of Power, Arunachal Pradesh; the Department of Power, Nagaland; and MSPCL shall identify one person from their top management as a nodal officer, who shall submit a monthly progress report on the implementation of the protection system to the NERPC and NERLDC, till the establishment of the Protection system at the substations identified by the NERLDC.

30. The Petition No.198/MP/2020, Petition No.259/MP/2020 and Petition No. 539/MP/2020 are disposed of in terms of the above.

Sd/	Sd/	Sd/	Sd/
(P. K. Singh) Member	(Arun Goyal) Member	(I.S. Jha) Member	(Jishnu Barua) Chairperson