ATC/TTC Report for July, 2021 i.r.o. Himachal Pradesh

**Objective:- To assess the ATC/TTC of Himachal Pradesh for July’21 scenario.**

**Assumptions:-** All India peak base case of July’21 scenario has been considered, LGBR is set as of projected load and generation for July’21. All major elements in Northern Region are considered to be in service. Swing bus is located in WR at Korba.

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| --- | --- | --- |
| **Name of Plant** | **Generation quantum in base case (MW)** | **Remarks** |
| Larji (3x42MW) | 126 |  |
| Bhabha (3x40MW) | 120 |  |
| Bassi (4x16.5MW) | 66 |  |
| Chulla (3x33.3MW) |  0 | All units of plant yet to be commissioned. |
| Kashng HEP (3x65MW) | 65 | Two units of Kashang HEP (Unit #1 and Unit#2) yet to be commissioned. |
| Sainj HEP (2x50MW) | 100 |  |
| Baspa HEP (3x100MW) | 300 |  |
| Malana HEP (2x43MW) | 86 |  |
| Sawra Kuddu (3x37MW) | 111 |  |
| Micro (IPPs) | 445 |  |
| Others | 93 |  |
| **Total State Generation** | **1512MW** |  |

**Note: -** Projected Demand for July, 21 is **1627 MW** and projected Generation for July’21 is **1512 MW** as per the LGBR Report of 2021-22.

# Observations:-

# Case-1:-

# Under import of 150 MW by HP (Demand: 1627MW & Generation: 1512MW).

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| --- | --- | --- | --- |
| **Month-Year** | **Total Import Capability (MW)** | **Reliability Margin (MW)** | **ATC/ Available Transfer Capability (MW)** |
| July-21 |  150 |  100 |  50 |

**Line Loading**

* Under normal condition, loading of 66kV Uperlanangal – Nalagarh Double-ckt intra state line is 101.8 % and under N-1 contingency, loading of other ckt is coming out as 201%.
* Under normal condition, loading of 66 kV Parwanoo- Barotiwala Single-ckt intra state line is 128%.
* Under normal condition, loading of 132kV Bajura- Larji Single-ckt intra state line is 119.7 %.
* Under normal condition, loading of 132kV Bijni- Larji Single-ckt intra state line is 122.4 %.
* Under normal condition, loading of 132kV Darlaghat- Bagha Single-ckt intra state line is 108.6 %
* Under normal condition, loading of 132kV Kangoo- Bagha Single-ckt intra state line is 137 %.
* Under normal condition, loading of 132kV Kunihar - Kangoo Double-ckt intra state line is 112 %. And Under N-1 Contigency, loading of other circuit is coming out as 147 %.
* Under normal condition, loading of 132kV Bajura- Kangoo Single-ckt intra state line is 113.9 %.

**ICT Loading**

* Under normal condition, 220/66KV, 200 MVA ICT Uperlanangal is 80%, there is no other ICT available at Station so N-1 contingency calculation not possible.
* Under normal condition, 132/66KV, 31.5 MVA Jutog ICT is 70.5%, Under N-1 Contingency, loading of other Transformer is 73.3%.
* Under normal condition, 220/132KV, 127 MVA ICT Chhaur is 81.4%, there is no other ICT available at Station so N-1 contingency calculation not possible.
* Under normal condition, 220/132KV, 200 MVA ICT Nehrian is 63.3%, there is no other ICT available at Station so N-1 contingency calculation not possible.

# Case-2:-

# Under import of 200 MW by HP Demand: 1750 MW & Generation: 1550 MW).

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| --- | --- | --- | --- |
|  **Month-Year** | **Total Import Capability(MW)** | **Reliability Margin (MW)** | **ATC/ Available Transfer Capability (MW)** |
| July-21 | 200 | 100 | 100 |

**Line Loading**

* Under normal condition, loading of 66kV Uperlanangal – Nalagarh Double-ckt intra state line is 109.2 %, under N-1 contingency, loading of other ckt is coming out as 215**%.**
* Under normal condition, loading of 132kV Bajura- Larji Single-ckt intra state line is 122 %.
* Under normal condition, loading of 132kV Bijni- Larji Single-ckt intra state line is 126 %.
* Under normal condition, loading of 132kV Kunihar - Kangoo Double-ckt intra state line is 115 %. And Under N-1 Contigency, loading of other circuit is coming out as 151 %.
* Under normal condition, loading of 132kV Kangoo- Bagha Single-ckt intra state line is 143 %
* Under normal condition, loading of 132kV Bajaura- Kangoo Double-ckt intra state line is 116 %.

**ICT Loading**

* Under normal condition, 220/66KV, 3x100 MVA ICT Baddi is 63.9 %, Under N-1 Contingency, loading of other Transformer is 80%.
* Under normal condition, 220/66KV, 200 MVA ICT Uperlanangal is 87.5 %, there is no other ICT available at Station so N-1 contingency calculation not possible.
* Under normal condition, 132/66KV, 31.5 MVA Jutog ICT is 76.2%, Under N-1 Contingency, loading of other Transformer 63MVA is 80%.
* Under normal condition, 220/132KV, 127 MVA ICT Chhaur is 86.2%, there is no other ICT available at Station so N-1 contingency calculation not possible.
* Under normal condition, 220/132KV, 200 MVA ICT Nehrian is 68.6%, there is no other ICT available at Station so N-1 contingency calculation not possible.

# Case-3:-

#  Under import of 527 MW by HP Demand: 1627 MW & Generation: 1100 MW).

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| --- | --- | --- | --- |
| **Month-Year** | **Total Import Capability(MW)** | **Reliability Margin (MW)** | **ATC/ Available Transfer Capability (MW)** |
| Julyl-21 | 527 | 100 | 427 |

**Line Loading**

* Under normal condition, loading of 66kV Uperlanangal – Nalagarh Double-ckt intra state line is 108.6 % and under N-1 contingency, loading of other ckt is coming out as 214 %.
* Under normal condition, loading of 132kV Kunihar- Kangoo Single-ckt intra state line is 130.1 %
* Under normal condition, loading of 132kV Kangoo- Bagha Single-ckt intra state line is 153.9 %

**ICT Loading**

* Under normal condition, 220/66KV, 200 MVA ICT Uperlanangal is 83.2%, there is no other ICT available at Station so N-1 contingency calculation not possible.
* Under normal condition, 132/66KV, 31.5 MVA Jutog ICT is 75.8%, Under N-1 Contingency, loading of other Transformer (63 MVA) is 73.3%.
* Under normal condition, 220/132KV, 2 X 100 MVA ICT Kangoo is 62.8%, Under N-1 Contingency, loading of other Transformer (63 MVA) is 79.2%.
* Under normal condition, 220/132KV, 200 MVA ICT Nehrian is 63.3%, there is no other ICT available at Station so N-1 contingency calculation not possible.