

**Abstract**

IHEP- restoration works of Unit#2-faults noticed during commissioning –constituting investigation committee - Sanction Accorded– Orders issued.

**Corporate Office (SBU-G/E)**

B.O .(FTD) No.656 /2020 (No. DGE/G3/IHEP-Unit#2 restoration/2020-21 Thiruvananthapuram dated: 02-11-2020

- Read:-
1. Letter No.No.CEG/AEE-I/IHEP/Unit#2 failure/2020-21/ 1131 dated 23-10-2020 of the Chief Engineer (Generation & PED), Moolamattom.
  2. Letter No.No.CEG/AEE-I/IHEP/Unit#2 failure/2020-21/ 1167 dated 27-10-2020 of the Chief Engineer (Generation & PED), Moolamattom.
  3. Note No.DGE/G3/IHEP-Unit#2 restoration/20-21 dated 27-10-2020 of the Director (GE & SCM)

**ORDER**

The Idukki HEP is the largest Hydro Electric Power Generating Station in Kerala, with an installed capacity of 780 MW (6x130 MW), commissioned in two stages, during 1976 & 1986. The first stage machines have covered a life span of more than 35 years and hence the Renovation & Modernisation works, were sanctioned by the Board as per order dated 16-03-2015 and the work was awarded to M/s GE Power India Limited. After renovation, the Unit #3 & Unit#1 were put back in service on 07.03.2019 & 14.07.2020, respectively. Though, the renovation of Unit#2 was completed and the 72 hour performance test run was successfully completed on 18.01.2020 and synchronised to the grid on 20.01.2020 at 17.30hrs., the unit tripped at 19.09 hrs with a heavy flash and explosion at the location of the excitation transformer.

As per the preliminary report, the cause of accident was the failure of 11kV bushing of the exciter transformer of Unit#2. The vibration monitor unit, control system cubicle, excitation modules and transformer cooler control panel, which were installed near to the explosion site, were also damaged partially in the heavy arcing and discharge of the 11kV fault current through the bus duct. Administrative Sanction was accorded for the urgent restoration works of Unit#2 as per Board Order dated: 06-05-2020 and the works were planned to carry out through the OEM, M/s GEPIL.

Meanwhile KSEBL constituted an investigation committee for finding the root causes behind the explosions occurred in Unit#2 and #6 of IHEP and the committee has submitted the report. Subsequently, it was planned to commission the Unit#2 by 15<sup>th</sup> October 2020 and the works were arranged accordingly. But, on 21.10.2020, while conducting commissioning tests by PET team of KSEBL, a fault was noticed in the stator windings, resulting considerable damage to their tan delta kit. Under these conditions commissioning and synchronising the machine is not possible without conducting a detailed analysis.

In the above circumstances, the Chief Engineer(Generation & PED) as per letters read as 1<sup>st</sup> & 2<sup>nd</sup> above has requested to constitute an expert committee for conducting investigation of the faults noticed during restoration works of Unit#2 at IHEP.

Having considered the recommendation in the Note read as 3<sup>rd</sup> paper above, the Full Time Directors, through circulation, resolved to constitute an Expert Committee comprising the following members, for conducting investigation of the faults noticed during restoration works of Unit#2 at IHEP.

1. Sri. C.N.Jayarajan, Dy.CE, O/o the Chief Engineer, Trangrid, Shornur.
2. Sri.Anilkumar.G, Executive Engineer, Transmission Division, Kothamangalam.
3. Sri.Rajendran. V., Executive Engineer, Protection Monitoring Division, Moolamattom.

Further resolved that the Committee shall initiate fault finding activities with the assistance of various agencies including departmental team of IHEP and submit the report within one month.

Orders are issued accordingly.

By Order of the Full Time Directors,

Sd/-  
(LEKHA.G)  
Company Secretary  
(In-charge.)

To:

1. The Chief Engineer (Generation & PED), Moolamattom.
2. All Committee members

Copy to:

The Chief Internal Auditor,  
The TA to CMD/D(GE&SCM)/ D(TSO)/ D(DIT&HRM)/D(GC)/D(P&S)  
The Fair copy Superintendent/Library/Stock File

Forwarded / By Order

Asst. Executive Engineer

DESPATCHEL