NATIONAL CONSUMER DISPUTES REDRESSAL COMMISSION
NEW DELHI

CONSUMER CASE NO. 2159 OF 2016

1. NATIONAL ALUMINIUM COMPANY LTD. .....Complainant(s)

Versus

1. ORIENTAL INSURANCE CO. LTD. & ANR.
2. ORIENTAL INSURANCE COMPANY PVT.LTD ALSO AT. .....Opp.Party(s)

BEFORE:

HON'BLE MR. JUSTICE A. P. SAHI,PRESIDENT
HON'BLE DR. INDER JIT SINGH,MEMBER

FOR THE COMPLAINANT : MR. ABHISHEK GUPTA, ADVOCATE WITH
MR. VAIBHAV DAYMA, ADVOCATE
MR. SRIDHAR-BHEL WITNESS

FOR THE OPP. PARTY : MR. PANKAJ SETH, ADVOCATE
MR. KHUSHI SACHDEVA, ADVOCATE

Dated : 15 October 2024

ORDER

1. This complaint is about deficiency in service alleged against the Oriental Insurance Co. by the Complainant which is also a Public Sector Enterprise of the Government of India under the Ministry of Mines. The company is involved in the production and export of Aluminium and it claims to be the Asia's Largest Integrated Aluminium Mining And Refinery Complex situate in Orissa.
2. The dispute regarding deficiency in service arises out of an Insurance claim which the Complainant alleges was in respect of a risk fully covered under the Standard Fire & Special Perils Policy (Material Damage), the duration whereof for the present controversy was between 10.05.2012 to 30.04.2013. The Insurance coverage was with regard to plant, machinery, buildings etc. about which there is no dispute and the sum insured was Rs.402,11,19,000/-. The specific itmes covered include all TG-sets speficically mentioned at Sl. No.(F) of Annexure-4 to the policy.
3. On 08.08.2012, a major break down took place causing damage to Turbo Generator-4 (TG Set-4) that was installed in 2010 which according to the Complainant was on account of a fire that emanated at the Exciter end of the equipment.
4. The officials namely Mr. SP Nanda & Mr. R.S. Das of the Complainant Company submitted a write up report on 09.08.2012 extracted hereinunder:

"PRELIMINARY REPORT

The turbo generator no.4 was in operation on 08.08.2012 with load of 13.15 MW. At about 7.25 PM the TG desk engineer Sri S.K.Baral, Dy. Manager(E) ***saw fire coming out of the***

generator *4. At about the same time the TG tripped on overall differential Protection. Sri Baral informed Station I/C & CISF fire wing.*

Sri Baral along with other colleagues Sri R.N.Naik, Sri Prince Kumar & Sri B.K. Behra tried to douse the fire with foam extinguishers available in the floor after stopping the oil pump cutting off oil supply & switching off the electrical system for the generator. CISF officials arrived soon after & started spraying foam into the generator. CISF officials arrived soon after & started spraying foam into the generator, CISF fire persons completed their operation by 09.00 PM.

BHEL has been informed vide e-mail dated 08.08.12 to visit the site & to inspect assess the extent of damage. On preliminary observation it is seen that the following damage has occurred:

1.The exciter was completely burnt. The stator was dislodged from its location.

2.the generator stator and rotor got damaged due to fire inside. The gerator Rear brg top cover was dislodged from its location and has fallen on the floor.

3.The TG gear box was completely displaced from its location and the foundation bolts were sheared. The base plate grouting was damaged. The barring gear mechanism was damaged.

4. partial damage was noticed on the coupling covers (Turbine-GB and Generator-GB).

Actual extent of damage shall be known after inspection by M/s BHEL persons."

5. The Complainant intimated the said fire incident and the damage caused with a simultaneous information to the Police Station as well as to Insurance Co. who were intimated by mail which is extracted hereinunder:

"08/08/2012 10:34 PM

Subject: Fw: Major Generator Break Down

Dear Sir,

Please arrange insurance surveyor for the ***TG-4 break down*** *due to fire on 08.08.12 at 7.25 pm, to assess damage and lodge insurance claim at the earliest.*

Regards

RS DAS

DGM(MECH)

NALCO, Damanjodi-763008,

INDIA,

Mobile No.9437005362

08/08/2012 10:22 PM

Subject: ***Major Generator Break down***

Dear Sir,

On ***08.08.12 at about 7.25*** *pm a major break down took place in our TG-4 (BHEL MAKE)* ***due to a sudden fire at the exciter end.***

The ***following major damages*** *were noticed.*

1. ***The exciter was completely burnt. The stator was dislodged from its location****.*
2. ***The generator stator and rotor got damaged due to fire inside. The Gerator Rear brg top cover was dislodged from its location and has fallen on the floor****.*
3. *The* ***TG gear box was completely displaced from its location and foundation bolts were sheared. The base plate grouting was damaged. The barring gear mechanism was damaged****.*
4. ***Partial damage was noticed on the coupling covers*** *(Turbine-GB and Generator-GB).*

Please depute your concerned experts on emergency basis to make the assessment of the damage and advise repair and corrective action thereafter.

The matter is most urgent.

Regards

RS DAS

DGM(MECH)

SPP,M&R COMPLEX,

NALCO, Damanjodi-763008,

INDIA,

Mobile No.9437005362 ”

6. The Insurance Co. appointed **M/s S.K Das & Associates** to conduct a **spot survey** and a **preliminary survey report** was submitted on **04.09.2012**. The same is extracted hereinunder:

“Ref No. CTK/SKD/OIC/F/12-13/101 Date:04/09/2012

To,

The Sr. Divisional Manager,

The Oriental Insurance Co. Ltd.,

5149, G.R.T. Tower, Lewis Road,

Bhubaneswar-751014

Reg: Damage/Loss to Turbo Generator due to fire

Date of loss:08/08/2012 at about 7:25 PM.

Policy NO.:345300/11/2013/66

Insured:M/s.NACLO, Refinery, Damanjodi

Dear Sir,

As per instruction received from your Office on 08/08/2012, we visited M/s. national Aluminium company Limited, Refinery Plant, Damanjodi, Koraput on 09/08/2012 in order to conduct survey & inspection of the above loss reportedly damaged due to fire. Inspection was carried out in presence of Mr. S.R.Naik, GM of SPP, Mr. S.P.Nanda,DGM (Electrical), Mr. R.S. Das DGM(Mechanical/SPP) and other concerned Officals. During our visit the TG-4 was not dismantled & **we could inspect the machine externally**. Details about the **sequence event** leading to the loss was collected from the concerned Engineers & **based on our inspection & discussion**, we are issuing our Preliminary Survey Report as under:-

PRELIMINARY SUVEY REPORT

Policy Details

Policy No.	3453001/11/2013/66
Name & Address Of The Insured	AB0000014044, M/s. National Aluminium co. Ltd., (NALCO), At Refinery Damanjodi, Odisha.
Location of the Risk	M/s. National Aluminium co. Ltd., Refinery Plant. Damanjodi, Odisha.
Name & Address Of the Insurer	The Oriental Insurance Co. Ltd. Divisional Office No.1, The Oriental Insurance Co. Ltd, 5149,G.R.T. Tower, Lewis Road, Bhubaneswar-751014.
Policy Period	From 01.05.2012 to 30.04.2013
Type of Policy	Standard Fire & Special Perils Policy

Co-Insurance:

1. The Oriental Insurance Co. Ltd. 50%
2. The New India Assurance Co. Ltd. 30%
3. M/s ICICI LOMBARD. 20%

Details of Sum Insured:

Fire Basic Cover. Rs.4,02,11,19,000/-

Earth Quake Cover. Rs.4,02,11,19,000/-

Terrorism Cover. Rs.4,02,11,19,000/-

Sum Insured for Items covered in the

Schedule SI.No.F of the Policy. Rs.14,000.00 Lakhs.

Excess Deductible

1. Standard Fire and Special Perils Policy (Except dwellings with Individual owners)

2. Policies having sum insured up to INR 10 Cr. Per location - 5% of claim amount subject to a minimum of Rs.10,000/-.
3. Policies having sum insured above INR 10 Cr. per location - up to INR 100 Cr. per location - 5% of claim amount subject to a minimum of INR Rs.25,000/-
4. Policies having sum insured above INR 100 Cr. & up to INR 1500 Cr. per location-5% of claim amount subject to a minimum of INR Rs.5 lakhs.
5. Policies having sum insured above INR 1500 Cr. & up to INR 2500 Cr. per location-5% of claim amount subject to a minimum of INR Rs.25 lakhs.
6. Policies having sum insured up to INR 2500 Cr. Per location-5% of claim amount subject to a minimum of INR Rs.50 Lakhs.

The Insurance under this policy is subject to warranties & Clauses otherwise stated herein.

1. Local Authorities Clause
2. Class of Construction
3. Plinth & Foundation.
4. Designation of Property Clause.
5. Endorsement-Earthquake (Fire and Shock)-Add on Cover.
6. Terrorism Damage Cover Endorsement.
7. Co-Insurance Condition.

CLAIM DETAILS

Date of Loss : 08/08/2012 at about 7:25PM

Date of Survey : 09/08/2012

ABOUT THE PROJECT

The Mining & Refinery at Damanjodi are an expanded in the second phase to produce its bauxite mines to 63 lakh tonnes per annum from the present 48 lakh tones for annum & the annual production capacity of its alumina refinery from 1.57 million tonnes to 2.1 million tones. There are four identical coal based captive power plant with 18.50 MW capacity TG sets for Insured's captive consumption. The 4th unit was damaged due to fire inside the Generator on 08.08.2012 at about 7.25 PM. This TG was supplied & commissioned by BHEL in September 2010.

OCCURRENCE:

It was reported by **Mr. S.P. Nanda, DGM** of Electricals, **Mr. R.S. Das, DGM** of Mechanical/SPP that, the Turbo Generator no. 4 was in operation on 08/08/2012 with load of 13.15 MW. At about 07:25 PM the **TG desk engineer Sri Baral**, Dy. Manager of Electrical **saw fire coming out of the 1 Generator 4.** At about the same time the **TG tripped on Overall Differential Protection**. Sri Baral informed Station I/C and CISF fire wing.

Sri Baral along with other colleagues Sri R.N. Naik, Sri Prince Kumar and Sri B. K. Behera tried to douse the fire with foam extinguisher available in the floor after stopping the oil pump, cutting off supply and switching off the electrical system for the generator. CISF fire persons completed their operation by 9:00 PM.

BHEL has been informed vide dated 08/08/2012 to visit the site and to inspect and assess the extent of damage.

SURVEY & OBSERVATION:

As per the instruction received from you, we have visited the premises of the insured on 09/08/2012 accompanied by Mr. S.R. Naik, GM of SPP, Mr. S.P. Nanda, DGM (Electricals), Mr. R.S. Das (DGM of Mechanical/SPP) of Nalco, Damanjodi and inspected the damaged Turbo Generator at the refinery Plant. We also discussed & enquired about the occurrence which led to the loss. It was explained by the officials of NALCO that the **Turbo Generator No-4 was in operation on 08/08/2012** with load of 13.15 MW. **But suddenly flame was seen coming out of the Generator from the Exciter end by Mr. S.K. Baral, TG desk engineer. The fire was controlled** immediately with the help of hand appliances such as foam extinguishers followed by spraying of foam by the CISF fire personnel's.

The TG was yet to be dismantled when we visited & **we could only inspect** the **Generator, Exciter, Gear box, couplings & bearings externally**. Following damages were observed:

1. **The stator of Exciter was dislodged** from its location.

2 **The Generator stator and rotor suspected to be damaged as black soot was seen inside the Generator. The Generator Rear Bearing top cover was dislodged from its location** and has fallen on the floor.

3. The **TG gear box was completely displaced from its foundation and the foundation bolts were sheared**. The base **plate grouting was damaged**. The **barring gear mechanism was suspected damaged**.

4. Partial damage was noticed on the **coupling covers** (Turbine-GB and Generator-GB).

5. The **Expansion bellow** between **Gear Box & the Turbine was broken**.

The exact cause of the fire could not be immediately known but fire originated from inside the Generator of the TG Set. The cause of fire could be known once the Generator is dismantled & inspected by the Engineers of BHEL.

ESTIMATED LOSS

Insured have given their preliminary estimation in the region of Rs.20 to 25 crores. It is worthwhile to mention here that 4 numbers of TGs of identical ratings are insured for Rs.140 crores under serial number (F) of the schedule attached to the policy. Thus each TG is insured for

Rs.35 crores.

It is early to correctly estimate the loss to TG as of now & could only be known once the Generator is dismantled & the extent of damage is assessed by the experts from the supplier M/s. BHEL. The final liability under the policy can not be commented as of now until the cause; extent of damage & exact source of fire is established.

THIS IS ISSUED WITHOUT PREJUDICE

Sd/-

For S.K.Das & Associates”

7. In support of the nature of the damage caused as well as the cause of the fire an expert report was also requested for from the original equipment manufacturers, namely M/s BHEL India Ltd. The equipment had been manufactured and had been purchased from M/s BHEL and a report was tendered on 30.08.2012 by them that explains the stepwise observations and the probable causes of failure. The said report has been filed on record and is extracted hereinunder:

“REPORT ON FAILURE OF UNIT #4, 19.1 MW STG AT NALCO, DAMANJODI

Date: 30.08.2012,

Ref: R/EME/MD/035/1201.

Mr. U.Sridhar, AGM, EM Engg and **Mr Kayarkar, AGM**, Field Services & Ext

Erection **visited NALCO**, Damanjodi **on 11.08.2012 to 12.08.2012 to inspect the 18.5 MW STG** which failed on earth fault and **investigate the possible reasons for its failure.**

Observations: The generator tripped on 08.08.12 on differential protection and it was observed that **huge noise was heard from the machine with thick clouds of pitch black smoke gushing out of the exciter zone. Exciter yoke and one of its supports were dislodged from position and fallen on to the ground. PMG was found thrown away to a distance. The turning gear motor was found removed from position and fallen on to one of its sides. Load gear box was found shifted with few of its anchor bolts sheared. Air guide ring on non-drive end was found completely damaged**.

Generator rotor was found completely charred with winding displaced from position.

Operational data: Operational data was collected before and at the time of failure. It **indicated that the bearing metal temperatures, shaft and housing vibrations were in order just before failure** However, the **generator winding temperatures read from the trends** was going well above class B limits and **the cold air and hot air temperatures were recorded more than normal values** (trends attached).

Also it was observed that the **vibration values had gone high during the failure. Overall there was heavy damage to generator, load gear and exciter components.**

Technical data of the machine

Rating/ Type of Generator : Continuous/TAII 1240-12P-15

Apparent Output : 23.875MVA

Active output : 19.1MW

Rated Voltage : 11KV

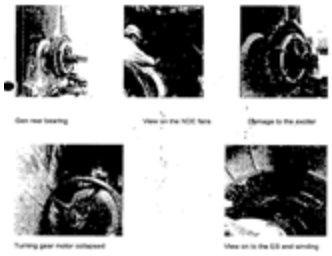
Power Factor : 0.8

Rated Current : 1253Amps

Rated Speed : 1500RPM

Frequency : 50Hz

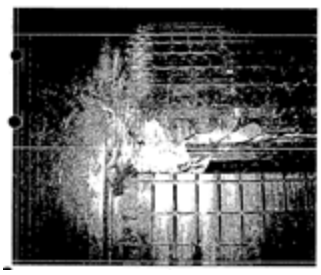
Visual inspection:



End Windings and Connections

The end winding on Exciter end was found to have severely damaged with top insulation removed at several locations.

Rotor components, retaining rings, fans:



Severe burning marks were found on the rotor surface, retaining rings, fans etc. Insulation on the rotor conductors was found to have peeled off at several locations on its non-drive end.

Stator Bar Insulation: **Completely burnt on non drive end**.

Foreign Objects: No foreign objects were seen in the stator.

Bearings - Non-drive end bearing housing top half was found dismantled from its position and fallen on to the ground. **Bearing shell was found rotated by about 60 degrees on its outer spherical periphery.**

Probable causes of failure.

i) **there could have been heavy vibration on excitation system possibly due to some defects in the foundation. Because of high vibration, exciter stator and exciter rotor would have rubbed fogether causing fire inside the exciter.**

ii)**Because of exciter failure and subsequent heavy vibration on the rotor, NDE bearing of generator disturbed resulting in oil splashing**

iii)**Failure of excitation system resulted in fire, which was propagated to generator inside through splashed oil.**

iv) Winding temperature could have gone high due to inadequate cooling effect.

v) **As stator winding was hot, it caught fire easily causing extensive damage to the generator.**

Recommendations

1) **The generator rotor and stator are severely damaged beyond repair and they need replacement** with new ones. Bearings and enclosure can be salvaged. **Exciter stator, rotor, PMG need replacement as the existing ones at site were found burnt off beyond repair**.

ii) Load gear box and turbine bearings and internals need to be inspected thoroughly for assessment of internal damages.

iii) Both the **generator and the exciter cannot be salvaged** as (a) core and winding of both of them were extensively damaged due to huge thermal and electromagnetic forces induced and (b) they were made out of Vacuum Pressure Impregnation process and **hence not possible to repair**.

Sd/-

U.Sridhar

AGM&EM Engg.

Sd/-

CL Kayarkar

AGM,ES&FSS. ”

8. A final survey report was tendered by M/s Cunningham and Lindsey who were the final surveyors appointed by the Insurance Co. on 20.12.2012. The same is extracted hereinunder:

FINAL REPORT

PREVIOUS REPORTS	Preliminary Report NO: 22/402/02778 dated 14th September 2012

POLICY TYPE/NO	345300/11/2013/66
CLAIM NO.	345300/11/2013/000005
INSURED	M/s National Aluminium co. Ltd., Refinery Plant, Damanjodi, Odisha
AFFECTED MACHINE	Turbo Generatro No.-4
TIME, DAY, DATE OF LOSS	8th August 2012 at about 7:25 PM
SITUATION OF LOSS	M/s National Aluminium co. Ltd., Refinery Plant, Damanjodi, Odisha
PERIL OPERATED	**Fire**
ROOT CAUSE	**The fire had originated due to electrical short circuit caused by failure of insulation inside the Generator of the TG**
NATURE, EXTENT OF DAMAGE	Following damages were observed by us. 1. Stator- windings scratched/burnt at places, Insulation torn/damaged at places. 2. Rotor – copper bars uprooted at places got fused and abraided at ends 3. Exciter-got uprooted and diodes erased/grazed/abraided. 4. Bearing-Bearing OK. Housing got dislocated from the foundation bolts.
EARLIER RESERVED RECOMMENDED	Nil
GROSS ASSESSED LOSS	Rs.18,20,63,560.00
NET ADJUSTED LOSS	Nil
POLICY DETAILS	
POLICY TYPE/NO.	Standard Fire & Special Perils Policy. Policy NO.:345300/11/2013/66
INSURERS	The Oriental Insurance Co. Ltd., 5149, G.R.T. tower, Lewis road, Bhubaneshwar-751014.
INSURED	M/s National Aluminium co. Ltd., Refinery Plant, Damanjodi, Odisha
LOCATION OF WORKS	M/s National Aluminium co. Ltd., Refinery Plant, Damanjodi, Odisha
PROPERTY INSURED	Turbo generators
PERIOD OF INSURANCE	From 01.05.2012 to 30.04.2013.
PARTICLUARS OF INSURANCE	
Item	Sum insured
Fire Basic Cover.	Rs.4,02,11,19,000/-.
Earth Quake Cover	Rs.4,02,11,19,000/-.
Terrorism Cover	Rs.4,02,11,19,000/-.
Sum Insured for Items Covered in the Schedule SI.No.F of the Policy.	Rs.14,000.00 Lakhs.
PERILS COVERED	As per Standard Fire & Special Perils Policy.

CLAUSES ATTACHED/ADDITIONAL COVERS

- Loacal Authorities Clauses.
- Class of Construction.
- Plinth & Foundation. Designation of Property Clause.
- Endorsement—Earthquake(Fire and Shock)-Add on Cover.

- Terrorism Damage Cover Endorsement.
- Co-Insurance Condition.

DEDUCTIBLES

1. Standard Fire and Special Perils Policy (Except dwellings with Individual owners)

2. Policies having sum insured up to INR 10 Cr. Per location - 5% of claim amount subject to a minimum of Rs. 10,000/-.

3. Policies having sum insured above INR 10 Cr. per location – up to INR 100 Cr. per location - 5% of claim amount subject to a minimum of INR Rs.25,000/-

4. Policies having sum insured above INR 100 Cr. & up to INR 1500 Cr. per location - 5% of claim amount subject to a minimum of INR Rs.5 Lakhs.

5. Policies having sum insured above INR 1500 Cr. & up to INR 2500 Cr. per location - 5% of claim amount subject to a minimum of INR Rs.25 Lakhs.

6. Policies having sum insured above INR 2500 Cr. per location - 5% of claim amount subject to a minimum of INR Rs.50 Lakhs.

INTRODUCTION

As per the instruction received from The Oriental Insurance Co. Ltd, Head office, New Delhi, through our New Delhi office we immediately contacted Mr. M.A. Raju, DGM (Materials) and Mr. S.C. Panigrahi, Dy Manager. We were told that the OEM's report was expected shortly and, that being a helpful document for verification of the loss, **we scheduled our visit for 5th September 2012**. Accordingly, we (from Kolkata office) and our Mr. M.R. Biswal (from Bhubaneswar office) left on 4th September and reached Insured's premises on 5th September 2012, as scheduled, and **carried out the survey of the reported loss** in the presence of Mr. R.S. Das DGM (Mechanical) SPP, Mr. S.P. Nanda, DGM (Electrical), Mr. Suvendu Mishra, AGM (Electrical) SPP, Mr. S.C. Panigrahi Dy Manager, Mr. M.A. Raju, DGM (Materials), Mr. Tirupati Roy AGM (Materials) and Mr.

Suresh Samal AGM (Electrical Operation). **The OEM's Inspection report had still not been shared with us.**

INSURED

Incorporated in 1981, as a public sector enterprise of the Government of India National Aluminium Company Limited (Nalco) is Asia's largest integrated aluminium complex, encompassing bauxite mining, alumina refining, aluminium smelting and casting, power generation, rail and port operations. Commissioned during 1985-87, Nalco has emerged to be a star performer in production, export of alumina and aluminium, and more significantly, in propelling a self-sustained growth.

The 15,75,000 TPA Alumina Refinery, having three parallel streams of equal capacity, is located in the picturesque valley of Damanjodi in Koraput district. In operation since September, 1986, the Refinery is designed to

- Provide Alumina to the Company's Smelter at Angul
- Export the balance Alumina to overseas markets through Visakhapatnam Port

On Panchpatmali hills of Koraput district in Orissa, a fully mechanized opencast mine of 4.8 million TPA capacity is in operation since November, 1985, serving feedstock to Alumina Refinery at Damanjodi located on the foothills. Presently, the capacity is being expanded to 6.3 million TPA.

ABOUT THE PROJECT

The Mining & Refinery at Damanjodi activity has been expanded in the second phase to produce its bauxite mines to 63 lakh tonnes per annum from the present 48 lakh tones for annum & the annual production capacity of its alumina refinery from 1.57 million tonnes to 2.1 million tones. **There are four identical coal based captive power plant with 18.50 MW capacity TG sets for Insured's captive consumption.** The 4th unit was damaged due to fire inside the Generator on 08.08.2012 at about 7.25 PM. This TG (No. 4) had been supplied and, commissioned **by BHEL in November 2010**.

BACKGROUND

In our earlier Reports, the last being 22/402/02778/PREL, dated 14th September 2012, we had apprised the Insurers of the circumstances giving rise to this loss, and the nature/extent of the claim. We do not propose to repeat all the information contained in our earlier reports. This Final Report is intended to provide estimated net loss adjustment, on without prejudice basis.

DESCRIPTION OF AFFECTED MACHINERY

There are four identical **coal based captive power plant with 18.50 MW capacity TG sets** for Insured's captive consumption. Details of the damaged TG - 4 are as under:

Turbine

Type	- EG800-2
Sl No	- T-0680
Max Output	- 19100 KW
Speed	- 5300 Rpm
Steam Pressure	- 66 KSC (a)

Exciter

BL Exciter Type	EAR80/9-15/16-2
Sl No	10721
Insulation Class	F
Excitation	338 W, 30.15 V, 11.08 A
PM Generation Type	EAP II/16-15/6

Generator

Drive	– ST
KVA	– 23875
KW	- 19100
PF Log	– 0.8
Frequency	- 50 Hz
RPM	– 1500
Ph	- 3 AC
Connection	- Y
Volt	– 11000 (Stator)
Amp	– 1253 (Stator)
Insulation	- Class F
Total Wt	– 50600 Kg
Sl No	- 1588
Year of Mfg	- 2007

The above TG No.4 was **supplied & commissioned by BHEL on 11.11.2010** and has already run for 11259 hours till the date of loss.

FURTHER ACTION

Subsequent to our visit we had issued our LOR dt.21.09.2012 requesting the Insured to send us necessary documents pertaining to the claim. First set of the claim papers were received by us on 12.10.2012. After scrutinizing the documents, we found them to be deficient. So we requested them to send us the balance of the documents. Insured submitted the second set of the claim documents vide their letter dt.16.10.2012 with an assurance to submit the balance documents as soon as they receive from their SPP Deptt. The Insurer also, vide their e-mail dt.15.11.2012, requested the Insured to submit the balance documents. Since Insured did not respond, we once again sent an e-mail on 04.12.2012 vide which we requested them to submit us the balance papers at the earliest failing which we will be issuing our independent Report to the Insurers. **We regret that the Insured did not submit the balance of the pending**

documents till date. As such, we discussed the matter with the concerned Divisional Office of the Insurers and, we are issuing our independent report based on the available documents.

NATURE AND EXTENT OF DAMAGE

During our visit we inspected the machine in the presence of following personnel.

Mr. R.S.Das	DGM (Mechanical) SPP,
Mr. S.P.Nanda	DGM (Electrical),
Mr. Suvendu Mishra	AGM (Electrical) SPP,
Mr. S.C.Panigrahi	Dy. Manager (Materials),
Mr. M.A.Raju,	DGM (Materials),
Mr. Tirupati Roy	AGM (Materials)
Mr. Suresh Samal	AGM (Electrical Operation).

Our observations are as under-

1. The generator was lying in dismantled condition, with exciter and rotor drawn out and also the gear box removed.

2. Stator - Windings scratched/burnt at places, Insulation torn/damaged at places.

3. Rotor - Copper bars uprooted at places got fused and abraided at ends.

4. Exciter - Got uprooted and diodes erased/grazed/abraided.

5. Bearing- Bearing Ok. Housing dislocated from foundation bolts.

CAUSE OF LOSS

The exact cause of the fire could not be known **but the fire is suspected to have originated from somewhere inside the Generator of the TG Set due to electrical short circuit probably by failure of coil insulation**. Inspite of our various letters, e-mails and telephonic requests, insured has not submitted the inspection report of BHEL**. In any case, we do not find any other cause except for electrical short circuit inside the Generator of TG No-4. There was no spread of fire.**

SUBBROGATION/RECOVERY

Not applicable

OTHER INSURANCES

No other Insurance Available.

POLICY CONDITIONS/WARRANTIES/LIABILITY

1. Local Authorities Clause.
2. Class of Construction.
3. Plinth & Foundation.
4. Designation of Property Clause.
5. Endorsement – Earthquake (Fire and Shock) – Add on Cover.
6. Terrorism Damage Cover Endorsement.
7. Co-Insurance Condition.

INSURED'S FINAL CLAIM

The insured has provided the budgetary offer from BHEL towards Replacement of the fire affected Generator as under. Freight, Excise duty/Cess and CST Extra.

Description of Items	Unit	Qty	Rate	Amount
Complete Generator with Exciter, Bearing Pedestal, Oil Gland & CO2 Fire Fighting System for TG 4	Set	1	Ex-Hyderabad works and with required packing 108,800,000.00	108,800,000.00
Unloading of Generator at site, Erection commissioning of Generator	Set	1	45,000,000.00	45,000,000.00
Total Value				153,800,000.00

Loss Assessment/Adjustment

Verification – Quantities

As advised by BHEL, the insured has claimed for the replacement of the damaged generator as the same is beyond economical repair. We are in conformity with the Insured's contention and recommend replacement, as claimed.

Verification –Rules

We have verified the rates offered by the manufacturers, Bharat Heavy Electrical Ltd and found in order. Since the insured would avail cenvat facility we have not considered the same in our assessment.

Assessment

Description of Items	Unit	Qty	Amount
(A) Complete Generator with Exciter, Bearing Pedestal, Oil Gland & CO2 Fire Fighting System for TG 4 including packing and forwarding charges.	Set	1	10,88,00,000.00
Add: Excise duty & Education Cess 12.36%			1,34,47,680.00
			12,22,47,680.00
Add: CST @ 2%			24,44,954.00
			12,4692,634.00
Add: Estimated Freight and insurance charges @1%			12,46,926.00
...ded Cost (Total-A)			12,59,39,560.00
(B)Unloading of Generator at site, Erection & Commissioning Charges	Set	1	4,50,00,000.00
Add: Service Tax & Education Cess @ 12.36%			55,62,000.00
Total-B			50562000.00
Gross Assessed Loss (A+B)			**18,20,63,560.00**

Technological Improvement

There is no Technological Improvement.

Depreciation/Obsolescence

The damaged TG-4 was supplied & commissioned by BHEL on 11.11.2010. Reasonably considering the average useful life of such TGs to be around 25 years, depreciation @4% per year for 2 years is applicable, in our opinion.

Salvage

The insured has not offered any offer for salvage value. The damaged generator would generate about 24960kg of copper scrap and 25640 kg of metallic scrap which is being deducted @Rs.400/- and Rs.21/- per kg respectively.

Copper scrap	24960 kg	400.00	99,84,000.00
Metallic scrap	25640 kg	20.00	5,12,800.00
Total			**1,04,96,800.00**

Loss Minimization Expenses

Not claimed by the insured.

Adequacy of Insurance

4 Nos of TGs of identical rating are insured for Rs. 140 crore under serial number "F" of the schedule attached to the policy. Proportionately, each TG is found insured for Rs.35 crore, even though the capitalised cost of the TG-4 is Rs. 5.46 crores as per Insured's records. Insured has not complied with our request for 'Quotation' for New Replacement Cost of the identical TGs, instead they submitted us the budgetary offer for Generator only. Therefore, we estimated the NRV of the insured TGs, as under, considering the cost of the Generator. and the rest of the items at 50:50 ratio basis:

Erected Cost of the Generator	: Rs. 182,063,560.00
Add : Cost of other components	: Rs. 182,063,560.00
Total estimated NRV of each TG	**: Rs. 364,127,120.00**
: Depreciation @8%	: Rs. 29,130,169.60
Value at Risk against each TG	**: Rs. 334,996,950.40 Say Rs. 33.50 crore**

Proportionate SI against each TG being Rs. 35 crore and VAR being Rs. 33.50 crore, the TGs are found to be adequately insured and component of average will not be applicable.

Deductible

Policies having sum insured above INR 100 Cr. & up to INR 1500 Cr. per location - 5% of claim amount subject to a minimum of INR Rs.5 Lakhs.

Adjustment

Gross Assessed Loss	Rs.	182,063,560.00
less: Cenvat	Rs.	19,009,680.00
	Rs.	163,053,880.00
Less: Depreciation 8%	Rs.	13,044,310.40
Market Value of the Loss	**Rs.**	**150,009,569.60**
Less: Salvage	Rs.	10,496,800.00
Net Assessed Loss	**Rs.**	**139,512,769.60**
Less: Excess @ 5%	Rs.	6,975,638.48
Net Adjusted Loss	Rs.	132,537,131.12
	SAY Rs.	**132,537,131.00**

CONCURRENCE

Insured’s concurrence not yet obtained.

CONTRIBUTION

Not applicable.

LIABILLITY

General Exclusion No-7 of policy reads as under-

"Loss, destruction or damage to any electrical and/or electronic machine, apparatus, fixture or fitting (excluding fans and electrical wiring in dwellings) arising from or occasioned by over running, excessive pressure, short circuiting, arcing, self-heating, or leakage of electricity, from whatever cause (lightning included) provided that, this exclusion shall apply only to the particular electrical machine, apparatus, fixture or fittings so affected and not to other machines, apparatus, fixture or fittings which may be destroyed by fire so set up.

Since the fire, occasioned by electrical short-circuiting, had originated inside the Alternator of the Generator and had not spread to any other machine, the claim clearly falls under the above exclusion of the policy and hence the Insurer's liability will not attach in this case.

LOSS PREVENTION/MINIMISATION

We are unable to recommend any measures towards loss minimization, as the loss appears to be due to failure of insulation for whatever reason.

PHOTOGRAPHS

Prints of 16 nos. of Photographs are enclosed with this Report.

ENCLOSURES

ANNEXURE – ‘A’ : Claim Form duly filled in

ANNEXURE – ‘B’ : Incident Report

ANNEXURE – ‘C’ : All 4 TG Details

ANNEXURE – ‘D’ : Logbook-10 pages

ANNEXURE – ‘E’ : G.A.Drwawing.

ANNEXURE – ‘F’ : Technical Details of TG-4

ANNEXURE – ‘G’ : DCS Report

ANNEXURE – ‘H’ : Capitalised Value of TG-4

ANNEXURE – ‘I’ : Budgetary offer of supply & Erection of Generator

ANNEXURE – ‘J’ : History of Major Maintenance on Generator-4

The above report is issued without prejudice to the rights of the Insurers.

Sd/-

S.K. Chatterjee

B.E.(Mech), FIIISLA

Senior Executive Director

Liscence No.SLA 16346/12-17 EXP 23/9/2017”

9. The information tendered by the complainant states the fire to have originated from the Exciter end of the generator whereas the report by the final surveyor indicated the fire to be originating from inside the generator due to short circuit caused by failure of coil insulation inside the generator. The final surveyor stated that the report of the original equipment manufacturer had not been shared with them and some documents were deficient. Nonetheless as quoted above the final surveyor also indicated that the fire is suspected to have originated from somewhere inside the generator of the TG set due to electrical short circuit and probably by failure of coil insulation. The final surveyor assessed the loss, but on the issue of liability referred to general exclusion clause no.7 to opine that since the fire had been occasioned by electrical short circuiting and had originated inside the alternator of the generator, and had not spread to any other machine or fixture, the claim falls under the exclusion clause of the policy hence there was no

liability on the Insurance Co. This is specifically stated in the concluding part of the surveyor's report under the heading liability.

10. The complainant has stated that they had submitted all documents pertaining to the claim lodged with the Insurance Co. and had also submitted the relevant expert reports that were noted by the Insurance Co. to have been tendered before the surveyor through the letter dated 06.12.2013, and after referring to the notings of the surveyor, the Insuracne co. though tentatively, but substantively, repudiated the claim by invoking the exclusion clause no.7 as is evident from the communication dated 12.06.2014 extracted hereinunder:

"To Dated:12th July, 2014

Mr. SCPanigrahi, Dy.Manager(materials)

M/sNational Aluminium Company Ltd.

Mines & Refinery Complex,

Damanjodi-763008

Odisha

Dear Sir,

Re:Repudiation of claim for Damage/Loss to Turbo Generator No.4 on 08.08.2012 at 7:25 PM under Fire Policy NO.345300/11/2013/66

Insured:M/s NALCO, Refinery Plant, Damanjodi (Odisha)

Kindly refer to the claim lodged by you under the above Policy vide your monetary claim bill against your claim no.OIC-007/ dtd.09/08/2012 and your letter dtd. 19/04/2014 & revised claim bill letter ref. no.Nal/Mat/Claims/OIC-007/14-15 dtd. 14/05/2014.

On close scrutiny of the papers submitted by you in support of your claim viz-a-viz the terms and conditions of the policy issued, we regret to inform you that the competent authority has decided that **your claim is not tenable on the following grounds as per the preliminary survey report of S K. Das & Associates and final survey report of Cunningham Lindsey** deputed to conduct survey in this claim:

As per the opinion of the surveyor **the cause of loss is due to Fire occasioned by electrical short- circuiting which had originated inside the Alternator of the Generator and had not spread to any other machine, the claim clearly falls under the General Exclusion No.7 of** the Standard Fire & Special Perils policy as per the details mentioned below:

1. As per the Write up on the incident of Fire in TG 4 pm 08.08.2012 submitted to the surveyor and signed by Mr. S P Nanda, DGM (E) & Mr. R S Das, DGM (Mech.) dt.09.08.2012, the **loss to the Generator stator and rotor is due to fire inside** (Point no. 2 of the write up).

2. The preliminary surveyor SK Das & Associates **confirmed that the fire originated from inside the Generator of TG set** which resulted the loss/damage.

3. The **Final Surveyor** Cunningham Lindsey International Pvt Ltd in their report **mentioned that the root cause of the loss is due to the fire which had originated due to electrical short circuit caused by failure of insulation inside the Generator of the TG**.

Nalco submitted the report of BHEL dt.30.08.2012 to the surveyor vide their letter dt. 06/12/2013 which states that the probable causes of failure is due to the following reason:

1. There could have been heavy vibration on excitation system possibly due to some defects in the foundation. Because of high vibration exciter stator and exciter rotor would have rubbed together causing fire inside the exciter.

2. Because of exciter failure and subsequent heavy vibration on the rotor, NDE bearing of generator disturbed resulting in oil splashing. 3. Failure of excitation system resulted in fire, which was propagated to generator inside through splashed oil.

4. Winding temperature could have gone high due to inadequate cooling effect.

5. As stator winding was hot, it caught fire easily causing extensive damage to the generator.

On going through the report of BHEL under this claim, the surveyor wrote to Nalco vide their mail dt. 27/03/2014 which is as under:

1. The preliminary surveyor had visited the site immediately after the loss. As per his report, the **fire was confined inside the generator only. No fire damage to the exciter was observed by him**.

2. As reported to us, **the flame was coming out of the Generator** (from the Exciter end **not from the exciter**) as first seen by Mr. SK Baral, TG desk engineer.

3. During our visit also we observed, **the fire was originated and confined inside the generator and not spread to outside**.

4. We have also **gone through the BHEL's Report which contradicts our observation and also of the observation of eyewitness** (your engineer).

5. Therefore, our earlier stand remain unchanged. **The damage to generator is considered as source of fire and therefore falls under the exclusion-7** of the policy which read as under:

“Loss, destruction or damage to any electrical and/or electronic machine, apparatus, fixture or fitting (excluding fans and electrical wiring in dwelling) arising from or occasioned by our running, excessive pressure, short circuiting, arcing, self-heating, or leakage of electricity, from whatever cause (lightning included) provided that, this exclusion shall apply only to the particular electrical machine, apparatus, fixture or fittings so affected and not to other machines, apparatus, fixture or fittings which may be destroyed by fire so set up",

We have already intimated to you about the decision of the surveyor vide our letter dtd.07/03/2013.

However, **you are being given one more opportunity to substantiate your claim in view of the grounds of repudiation mentioned above before a final decision is**

taken at our end. Your representation/clarification must reach us within 2 weeks from the date of receipt of this letter. Please note that in case we have no response from you within 2 weeks from the date of receipt of this letter the claim shall stand repudiated for the reasons indicated above without further advices from us.

Thanking you.

Yours faithfully

Sr. Divisional Manager"

11. The Complainants however pressed for a review of the aforesaid semifinal repudiation whereupon the surveyor submitted an **addendum report on 05.10.2015** which is extracted hereinunder:

"PREVIOUS REPORTS Final Survey Report No: 22/402/02778

Dated 20th December, 2012

POLICY TYPE/NO, 345300/11/2013/66

CLAIM NO. 345300/11/2013/000005

INSURED M/s. National Aluminium Co. Ltd.,

Refinery Plant, Damanjodi, Odisha.

AFFECTED MACHINE Turbo Generator No-4

TIME, DAY, DATE OF

LOSS 8th August 2012 at about 7:25 PM.

Following submission of our Final Survey Report, the insured did not agree to the nil liability made by us and requested us for a joint meeting with the BHEL Engineer in presence of the insurer and surveyor. Accordingly our Regional Director Mr. Ajit K Sharma and attending surveyor Mr. M.R. Biswal visited Nalco Damanjodi on 26th September 2014. The claim was discussed at length and a MOM was prepared which is enclosed for your reference. During the discussion, **we were not convinced with the BHEL Engineer that, the fire was originated from the Excitor of TG-4 as the circumstantial evidence, observation of the preliminary surveyor and the photographs were not supporting his opinion**. In order to examine the matter further, we had requested the insured to submit us some more documents for our verification.

The insured submitted the documents in piece meal manner vide their letter dt 17.11.2014, dt 02.01.15 & 05.02.15. We have verified the documents submitted by the insured. **We have also verified the root cause analysis report of BHEL dt 30.08.2012 which is reproduced as under**:

Probable cause of Failure

1. There could have been **heavy vibration on excitation system possibly due to some defects in the foundation. Because of high vibration, exciter stator and exciter rotor. would have rubbed together causing fire inside the exciter**.
2. Because, of exciter failure and subsequent heavy vibration on the rotor NDE bearing of generator disturbed **resulting in oil splashing**.
3. Failure of excitation system resulted in fire **which was propagated to generator** inside through splashed oil.
4. **Winding temperature could have gone high** due inadequate cooling effect.
5. As stator winding was hot, **it caught** fire easily causing extensive damage to the generator.

CAUSE OF LOSS

1. The preliminary surveyor had visited the site immediately after the loss. As per his report, the fire was confined inside the generator only. **No fire damage to the exciter was observed by him**.

2. As reported to us, the flame was coming out of the Generator (from the Excitor end, not from the excitor) as first seen by Mr. S.K. Baral, TG desk engineer.

3. During our visit also, we observed the fire was originated and confined inside the generator and not spread to outside.

4. We have also gone through the BHEL's Report which contradicts our observation and also to the observation of eyewitness (your engineer).

5. **The damage to generator is considered as source of fire and therefore falls under the exclusion-7 of the policy**.

LIABILITY

Therefore, our **earlier stand remain unchanged. The claim clearly falls under the electrical exclusion of the policy and** hence the Insurer's will not attach in this case.

The above report is issued without prejudice to the rights of the Insurers.

Sd/-

M.R.Biswal

Regional Head"

12. The surveyors again reiterated their stand but this time they noticed the report of BHEL, dated 30.08.2012 and indicated that it contradicts the observation of the surveyors. It was reiterated that the damage was caused to the generator, which was also the source of fire, and therefore the exclusion clause no.7 of the policy squarely applies to repudiate the claim.
13. The Insurance co. vide their letter dated 05.01.2016 while tendering the said addendum report of the surveyor again reiterated their repudiation on 05.01.2016. The said communication is extracted hereinunder:

"Dt 05/01/2016

To

Sri S C Panigrahi, Manager (Materials)

National Aluminium Co. Ltd.

Mines & Refinery Crmplex

Damanjodi-763008

Odisha

Dear Sir,

Re-Our Claim No-345300/11/2013/000005,

Policy No-345300/11/2013/66,

Claim of TG-4, Ac-Refinery Plant Damanjodi.

We invite your kind reference to our letter dt 12/06/2014 on the subject Claim. We issued this pre repudiation letter expressing our inability to make payment on the claim on the basis of the Survey report as the cause of the loss was found falling under the exclusion (Exclusion No-7) of the Policy.

However in view of your pressing demand for a review of the case, we took up the matter with the surveyors for a re-cxamination of the case especially on the aspect of finding the exact cause of the loss.

The surveyors, after re-examination of the case have submitted their findings in form of an addendum to their earlier report conforming their earlier finding as correct.

They have hold that the ***fire in the TG is found to be the source of the fire*** *in this case and the same loss is not payable as per the exclusion no 7 of the Policy.*

In view of this position we are constrained to repudiate our liability on the claim.

As desired by you, we are sending a copy of the addendum report dt 05/10/2015 of the Surveyors for your perusal.

Thanking You

Yours faithfully

Sd/-

Sr.Div. Manager"

14. Aggrieved, the Complainant company has come up questioning the correctness of the repudiation and alleging non-applicability of the exclusion clause urging that this is a deficiency on the part of the Insurance Co. as it has wrongly applied the said exclusionary clause to erroneously decline the genuine claim of the Complainant.
15. The dispute therefore centers around the source where the fire emanated and the impact of the fire causing any damage to the equipment as well as the source of the impact causing the damage so as to attract or detract the exclusionary clause. This is essential while analyzing the issue of an internal spark as alleged by the Surveyors and accepted by the Insurance Co. or the root cause of damage being a huge vibration of a mechanical failure resulting in the fire as concluded by the OEM experts.
16. To understand the real contest between the parties which hinges upon the application or otherwise of the exclusion clause no.7, it would be apt to quote the same.

> *"(1) This policy does not cover (not applicable to policies covering dwellings)*
>
> *(7)[Loss, destruction or damage to any* ***electrical*** *and/or electronic machine,* ***apparatus****, fixture or fitting (excluding fans and electrical wiring in dwellings)] [****arising from or occasioned by over running, excessive pressure, short circuiting, arcing, self- heating or leakage of electricity, from whatever cause*** *(lighting included)] [****provided*** *that,* ***this exclusion shall apply only to the particular electrical machine****, apparatus, fixture or*

*fitting so affected] [**and not to other machines, apparatus, fixture or fittings which may be destroyed by fire so set up.]"***

17. The contention of the Complainants Counsel is that the fire emanated from the Exciter end which in turn caused damage to the generator and since the Exciter is in itself a separate component, therefore the fire that emanated from the Exciter travelled to the generator and caused damage as explained in the complaint as well as the claims made by the complaints through their various letters to the Insurance Co. The submission of the Complainants is that the loss was occasioned on account of the fire having emanated in the Exciter that had damaged the generator and in such a situation the exclusion clause would not apply and hence the claim in respect of the damage to the specific parts mentioned in the claim are indemnifiable. It is urged that the parts mentioned are separate distinct parts of machinery that were damaged due to the said incident and which is supported by the expert report of the original equipment manufacturer, hence the fire loss is a covered risk and not excluded under clause 7 quoted hereinabove.
18. The matter was heard on previous occasions in order to understand the technical aspect that was canvassed by the learned Counsel for the parties and it is for the said purpose the Commission on 26.10.2023 passed the following order.

"*"**DATED:26.10.2023***

ORDER

Heard learned counsel for the complainant and the learned counsel for the Insurance company.

This complaint arises out of an insurance claim that has been repudiated by the Insurance company vide letter dated 12.06.2014 relying on the final survey report dated 12.06.2014 on the ground that the exclusionary clause no.7 under the policy disallows the claim.

This was followed by the subsequent intimation of repudiation dated 05.01.2016 that seems to have been occasioned after the complainant had submitted documents under the letters dated 30.10.2014 and 22.12.2014 along with the report of the engineers from the OEL (Original Equipment Manufacturer) M/s BHEL India Ltd. whose report dated 30.08.2012 came to be intimated to the complainant on 06.12.2013.

The report of the engineers from BHEL is dated 30.08.2012 but seems to have been communicated long after the submission of the final survey report but had been tendered by them prior to the repudiation dated 12.06.2014. The consideration thereof however along with the addendum report dated 05.10.2015 to the final survey report finds mention in the repudiation intimation dated 05.01.2016.

The arguments which have been advanced primarily on facts rests on the issue as to the location of the cause of fire which according to the complainant was from the exciter end of TG-4 whereas the final survey report indicates that the probable cause of fire seems to have originated somewhere inside the generator of the TG set due to electrical short circuit probably by failure of coil insulation.

The contest between the complainant and the Insurance company seems to be at variance on the exact nature of the observations made by the engineers of the OEM M/s BHEL India Ltd. The probable causes as indicated by the engineers are as follows:

"Probable causes of failure:

i. *There could have been heavy vibration on excitation system possibly due to some defects in the foundation. Because of high vibration, exciter stator and exciter rotor would have rubbed together causing fire inside the exciter.*

ii. *Because of exciter failure and subsequent heavy vibration on the rotor, NDE bearing of generator disturbed resulting in oil splashing.*

iii. *Failure of excitation system resulted in fire, which was propagated to generator inside through splashed oil.*

iv. *Winding temperature could have gone high due to inadequate cooling effect.*

v. *As stator winding was hot, it caught fire easily causing extensive damage to the generator."*

It is in this background that the learned counsel for the Insurance company has insisted that the pleadings on record do not substantiate any challenge to the observations made by the final survey report, and in the absence of any material including the rejoinder as well as the evidence affidavit, the question of the claim surviving on the basis of the material on record may not be possible and therefore the repudiation should be upheld. It is therefore the contention of the learned counsel for the Insurance company that the exclusion clause is clearly attracted so long as the aforesaid finding of the surveyor which has been accepted in the repudiation letter is not being questioned by any cogent or viable evidence.

At this stage, the Commission finds that this is not an ordinary claim by an ordinary litigant but by a Public Sector Undertaking which has suffered a huge loss on account of the incident/accident and the contest on the basis of the material on record appears to be resting somewhere on the findings recorded by the engineers of M/s BHEL India Ltd. who are the Original Equipment Manufacturers. To rely on such a report, it would be necessary, in the opinion of the Commission, to examine the engineers and allow the Insurance company to cross-examine them in order to arrive at a correct assessment of the location of the cause of fire as that would directly govern the operation of the risk policy, the guarantee whereof can be excluded only on the basis of positive evidence.

Consequently, it would be appropriate that the engineers who have submitted the said report dated 30.08.2012 may be examined by the Commission in order to proceed further. Learned counsel for the complainant may therefore enquire about the status of the availability of those engineers from M/s BHEL India Ltd. through their sources and to enable the Commission to know as to whether they can be available and be summoned for the purpose of examination keeping in view the aforesaid contentious issue of the emergence of fire.

Let the information be given as early as possible. Learned counsel for the complainant prays for four weeks' time to enable him to provide this information.

List for directions on 30.11.2023. "

19. This was followed by another order on 30.11.2023 which is extracted hereinunder:

*"**DATED:30.11.2023***

ORDER

Heard learned counsel for the complainant and the learned counsel for the Insurance Company.

The matter had been adjourned for enabling, the complainant to enquire about the availability of the engineers of M/s. BHEL India Limited, who were involved with the assessment of the damage caused to the equipment the dispute whereof has arisen in the present case.

In response to the order dated 26.10.2023, the complainants have explored the said possibility, and out of the engineering staff that had then attended to the said equipment, one of them Mr. C. L. Kayarkar has been traced out, even though he has superannuated from the BHEL India Limited. Mr. Kayarkar has expressed that since he has superannuated, and the report earlier tendered is a property of the organization that is M/s. BHEL India Limited, he will be able to depose, only if M/s. BHEL India Limited directs him to do so.

Learned counsel for the complainant states that he will inform information M/s. BHEL India Limited in respect of the permission sought or otherwise.

Let the aforesaid effort be made but at the same time it is necessary for this Commission to proceed with this matter as this is a complaint of the year 2016 and is pending adjudication, which at this stage needs the opinion of the engineers and examine them on the report which has been tendered and forms the foundation of the claim.

The Commission under the Consumer Protection Act, 1986 is empowered under Section 13 (4) as follows:

"(4) For the purposes of this section, the District Forum shall have the same powers as are vested in a civil court under the Code of Civil Procedure, 1908 (5 of 1908) while trying a suit in respect of the following matters, namely:—

(i) the summoning and enforcing the attendance of any defendant or witness and examining the witness on oath; (ii) the discovery and production of any document or other material object producible as evidence;

(iii) the reception of evidence on affidavits;

(iv) the requisitioning of the report of the concerned analysis or test from the appropriate laboratory or from any other relevant source;

(v) issuing of any commission for the examination of any witness; and

(vi) any other matter which may be prescribed."

The said powers are reiterated in the procedure provided for under Sub-Section 9 of Section 38 of the Consumer Protection Act, 2019. The Consumer Forum therefore is authorised under the Act to seek any such relevant information that may be necessary for the adjudication of the dispute.

In exercise of such powers, it is directed that a copy of this order shall be dispatched by the complainant to M/s. BHEL India Limited requesting them to intimate Mr. C.L. Kayarkar and instruct him to attend the proceedings of this Commission in terms of the order dated 26.10.2023, as it is necessary to examine him for the purpose of the claim of insurance made by the complainant, against the opposite party/ Insurance Company. It is clarified that summoning of Mr. C. L. Kayarkar will not in any way prejudice, M/s. BHEL India Limited, whatsoever, in as much as he will only be here to assist the Commission for arriving at the truth, regarding the report which is the subject matter of consideration.

The said intimation shall also be communicated to Mr. C. L. Kayarkar, requesting him to intimate about his convenience of appearing before this Commission on any date that may be suitable to him only to enable the date to be fixed in the matter for his assistance. The Complainant will therefore make suitable arrangements for Mr. Kayarkar for his visit to Delhi.

List on 24.01.2024 for directions/ orders."

20. Accordingly, the matter remained pending for the arrival of the concerned engineer who had tendered the report earlier namely Mr. Karyarkar but he could not appear on account of some ailment and instead his co-engineer who was also signatory to the expert report namely Mr. U. Sridhar was made available, hence the following order was passed on 04.03.2024.

*""**Dated:04.03.2024***

ORDER

Heard learned counsel for the complainant. The case was argued on 26.10.2023 when a detailed order was passed adjourning the matter to enable the learned counsel for the complainant to inform the Bench about the availability of those engineers, so as to assist the commission to find out the correct status of the probable causes that were indicated by them in their report. As a matter of fact, learned counsel for the complainant did make an effort and found out that Mr. C.L. Kayarkar, one of the two engineers, who had submitted the report, was available and had agreed to assist the Bench. However, due to unfortunate circumstances, it is informed that Mr. Kayarkar has suffered some ailment as a result whereof he is hospitalised and therefore could not make himself available as offered earlier and recorded in the order dated 30.11.2023.

Learned counsel for the complainant today urged that the other engineer, who is a signatory to the said report, namely, Mr. U. Sridhar, is available and he has been contacted and therefore he can be requested to assist the bench on this issue. For this learned counsel for the complainant prays for four weeks' time. Mr. Seth, learned counsel for the opposite parties is present. The time prayed for is granted in the interest of justice as the justification for the probable causes of failure has to be located with the help of these engineers.

Consequently, as prayed let the matter be listed on 31.05.2024 at 2.00 p.m.

It is expected that on that day, Mr. U. Sridhar would assist the bench and if possible the complainant may get an affidavit prepared and serve the same on the learned counsel for the opposite parties. "

21. Mr. U. Sridhar appeared on 31.05.2024 and also filed an affidavit in the shape of evidence. A copy whereof was served on the learned Counsel for the Insurance Co. Mr. Seth. After perusing the affidavit and his statement, time was granted to Mr. Seth learned Counsel for the Insurance Co. permitting him to raise any interrogatories in case they so desire. The matter was adjourned on 31.05.2024 by the following order.

*"**Dated:31.05.2024***

ORDER

Heard learned counsel for the complainant.

Vide a detailed order dated 26.10.2023, it was found necessary to obtain evidence with regard to the report of the Original Equipment Manufacturers dated 30.08.2012. Consequently, learned counsel for the complainant was requested to find out the possibility of the availability of the engineers who had tendered the report dated 30.08.2012. With the efforts of the complainant, the engineers were traced out, one of whom Mr. C.L. Kayarkar

had earlier agreed to assist the Bench but on account of his falling health, he could not attend the Commission. Fortunately, the complainant came with the information that the co-engineer who had authored the report dated 30.08.2012, Mr. U. Sridhar, is available and he has agreed to assist the Bench.

These facts were recorded in the order dated 04.03.2024 and today Mr. Sridhar has appeared and the complainant has filed its ***affidavit of evidence sworn by Mr. Sridhar*** *categorically verifying the report dated 30.08.2012 and also having explained it in paragraph-8 of the affidavit, which is extracted hereunder:*

"8. That after collecting the necessary information, we performed the root cause analysis and submitted our observations, findings and recommendations in the form of the report dated 30.08.2012. ***The report was jointly prepared by me and Mr. Kayarkar****. The observations in the report and the operational data have been verified from the log data book of the TG. The photographs in the report were also taken by us.* ***As per the probable causes of failure in our report, there was heavy vibration in the Exciter, which led to the rubbing of the stator and rotor in the Exciter and caused fire within the Exciter. This further led to failure of the generator rear bearing and splinters of bearings hitting the rear end cover of generator stator. This in turn led to breakage of the cover and oil splashing on to the generator and windings, thereby causing fire to the generator****."*

A copy of the said affidavit of evidence by Mr. U. Sridhar has also been served on the learned counsel for the Insurance Company Mr. Seth who submits that he would require some time to obtain instructions for responding to the said affidavit and also to the verification deposed by Mr. Sridhar to the report dated 30.08.2012. Mr. Seth submits that this is necessary because it was this report which led to its resubmission before the surveyor who after having perused the same gave an addendum report dated 05.10.2015 contained at page 83-84 of the complaint.

The surveyor after having noted the report dated 30.08.2012 has given his own opinion about the cause of loss.

The issue has been narrowed down to the fact as to whether the fire emanated from the Generator as alleged by the surveyor or its source is found in the Exciter as indicated in the report.

Prima facie, the said report dated 30.08.2012 is from the Original Equipment Manufacturers and the affidavit of Mr. U. Sridhar categorically states that they had been called upon to examine and carry out a root cause analysis which they have conducted where-after they have arrived at the conclusions given in the report as also stated in paragraph-8 of the affidavit filed today. ***It is therefore evident that the Original Equipment Manufacturers have certified the occurrence and igniting of the fire at the***

first instance due to vibration in the Exciter which in turn resulted in the rubbing of the stator and rotor in the Exciter causing the fire.

The above mentioned movements in the machine led to the impact on the rear bearings of the generator and the splinters thereof hitting the rear end cover of the generator stator. This in turn caused the breakage of the cover and as a consequence thereof oil splashed on the generator and the winding, causing fire to the generator.

The explanation given by the engineer therefore is categorical to the sequence of the fire emanating from the Exciter leading to fire in the generator.

Mr. Seth submits that he may be permitted to respond to the said statement made by Mr. U. Sridhar by filing an appropriate affidavit or raising interrogatories after consulting the Insurance Company or the surveyor which he proposes to do within 8 weeks from today.

Let the response or the interrogatories which the Insurance Company chooses to make on the affidavit of evidence by Mr. U. Sridhar be served on the learned counsel for the complainant within the time indicated above, who may in turn file a response thereto as well as to the interrogatories, if any, by consulting Mr. U. Sridhar and submit the same within 3 weeks thereafter.

Let the response be exchanged as indicated above and the matter shall be taken up on ***24.09.2024 at 2.00 p.m.***

Mr. Sridhar is requested that in case it is possible for him, he may attend the Commission and the complainant shall extend all facilities to him for his assistance to the Commission.

In the event the Insurance Company serves the interrogatories to the learned counsel for the complainant, he may endeavour to prepare the answers to the interrogatories and file it also by the next date fixed after serving an advance copy to the learned counsel for the other side.

The affidavit of Mr. U. Sridhar filed today is taken on record. The Office is directed to give a diary number to the same. ”

22. The affidavit dated 30.05.2024 sworn by Mr. Sridhar is on record. The contents thereof are extracted hereinunder:-

“AFFIDAVIT OF EVIDENCE OF U. SRIDHAR

I, U. Sridhar, s/o U.S.N. Murthy, aged 64 years, residing at Madinaguda, Miyapur, Hyderabad-500049, presently at New Delhi, do hereby solemnly affirm and declare as under:-

1. That I am an Engineer by qualification and have done B.Tech (Mechanical) from Government College of Engineering, Kakinada, Andhra Pradesh and MBA (Marketing and Finance) from JNTU, Hyderabad. I joined BHEL in the year 1982 and continued serving in BHEL until my superannuation. I superannuated from M/s BHEL in the year 2020 as AGM (Defence Business). During my entire tenure, I have held various posts and worked in different disciplines, including Electrical Machines Engineering (EM), EM Technology, New products, Corporate R&D etc.

2. The facts and matters set out in this Affidavit are within my knowledge inasmuch as I was working as AGM & EM Engg. at BHEL during the years 2012-13, when BHEL conducted inspection and investigation of the failure of Unit#4, 19.1 MW Steam turbine Generator (TG) at NALCO, Damanjodi. I have prepared the report dated 30.08.2012 along with Mr. Kayarkar (the then AGM (ES & FSS), BHEL).

3. I was approached by the law department of NALCO Damanjodi sometime in the first week of March, 2024 to assist the Hon'ble Commission in the present matter to find out the correct status of the probable causes of failure of TG that were indicated by Mr. C.L. Kayarkar and me in our report dated 30.08.2012. I was given a copy of the said report by NALCO for my examination and review. I verify the contents of the report and the conclusions reached therein.

4. I was instructed by my GM at that time to conduct root cause analysis of the damaged TG. Root cause analysis is carried out by BHEL, i.e. the original equipment manufacturer of the TG, for such problems causing failure of the TG. A root cause analysis is carried out to determine the reasons behind failure of any equipment. We chalk out the issues involved for the problem and attempt to find out the most probable causes of the failure by assimilating data from the readings of the equipment taken in the control room, photographs and site visit. The analysis is carried out in teams comprising of experts chosen by the Head of the unit for major problems and concerned General Managers for other issues.

5. Over the years, I have carried out several inspections and root cause analysis of failure of generator components and their performance and troubleshooting on behalf of BHEL. I have performed several root cause analysis for the Government of India, PSUs and companies in India and abroad, and prepared reports diagnosing the cause of failure.

6. A Turbo Generator (TG) is used to convert rotational mechanical energy into electrical energy. A TG set refers to total equipment in the turbine hall, including the turbine, generator and their machines and apparatus like Exciter, DAVR and PMG. A generator is the main machine which converts mechanical energy into electrical energy. An exciter is intended to supply DC power to generator rotor to make the generator rotor an electromagnet. TG may or may not have an exciter, since DC current can be given from external sources also like static excitation equipment.

7. That I and Mr. CL Kayarkar were deputed from BHEL Hyderabad to inspect the damaged STG and investigate the possible reasons for its failure. We visited the site at NALCO Damanjodi on 11.08.2012 and 12.08.2012 to collect the necessary information for undertaking a root cause analysis to determine the cause of failure of the damaged STG.

8. That after collecting the necessary information, we performed the root cause analysis and submitted our observations, findings and recommendations in the form of the report dated 30.08.2012. **The report was jointly prepared by me and Mr. Kayarkar.** The observations in the report and the operational data have been verified from the log data book of the TG. The photographs in the report were also taken by us. As per the probable causes of failure in our report, there was heavy vibration in the Exciter, which led to the rubbing of stator and rotor in the Exciter and caused fire within the Exciter. This further led to failure of the generator rear bearing and splinters of bearings hitting the rear end cover of generator stator. This in turn led to breakage of the cover and oil splashing on to the generator and windings, thereby causing fire to the generator.

Sd/-

Deponent

(U.Sridhar)

Verification:

I, the above-named deponent, do hereby verify that the contents and facts stated in above paragraphs are ture and ocorrect to the bset of my knowledge, nothing material is concealed therefrom and no part thereof is false.

Verified at New Delhi on this 30th day of May,2024.

Sd/-

Deponent

(U.Sridhar)”

23. After all this exercise the matter was finally heard on 24.09.2024 when Mr. Seth learned Counsel for the Respondent stated that on instructions from the Insurance Co. he has to proceed with the final arguments as no interrogatories are to be served. However, Mr. Sridhar was again present for any queries to be answered by him as may be required by Mr. Seth for the Insurance Co. Mr. Seth urged that the affidavit of Mr. Sridhar clearly indicates that the Exciter is a component of the Turbo Generator Set-4 which he submits is part of the same equipment that is provided to enable the generator to operate with the infusion of DC current and create a magnetic field which in turn rotates the generator.
24. Mr. Seth therefore submits that even though as per the surveyors report the fire had generated inside the generator, the said claim is not indemnifiable as per the exclusion clause and even otherwise the Exciter is a necessary component of the equipment which is the Turbo Generator and is a part of it. He submits that the Exciter is not a separate machine and according to the manufacturers themselves the entire Turbo Generator-4 was manufactured as required by the Complainants and installed as a whole single equipment for generating electricity. Mr. Seth submits that there is no occasion to split the various components of the Turbo Generator to display as if the Exciter is a separate machine, and even otherwise the intimations given by the Complainant in respect of the claim lodged in the communication dated 08.08.2012, 10.08.2012, the preliminary reports of the staff of the Complainant, the letters dated 21.09.2012, 08.10.2012 and 16.10.2012 all uniformly indicate that the claim was for damage to the active Turbo Generator-4 set complaining about its breakdown. The claim therefore was about the Turbo Generator Set which is one whole equipment, and even if the fire had generated from any of the Components, the same was from within and not from outside. Consequently, the exclusion clause in strict terms was rightly invoked to repudiate the claim as any such incident of fire occurring within the equipment and causing any loss is not indemnifiable. He has reiterated that there was no external cause of fire and on the other hand the fire which emanated in the equipment namely the Turbo Generator-4 had not damaged any other machinery or fixture so as to give rise to an indemnifiable claim. Mr. Seth therefore urged that the claim cannot succeed by splitting up the parts of the same equipment which was clearly understood between the parties in their communications to be a loss caused to the Turbo Generator Set and not to any one single component that was to be treated separately.
25. Learned Counsel for the Complainant however, relying on the original equipment manufacturers report and the communications on record vehemently urged that the argument raised on behalf of the Insurance Co. by Mr. Seth is an argument which has been developed now having failed to contradict the findings of the expert report and the affidavit of the Engineer that has been brought on record. This is a novel argument which does not find place either in the survey reports or the letters of repudiation. He submits

that the Insurance Co. right from inception had diverted and attempted to locate the source of fire exclusively from within the generator which was treated by the Insurance Co. as a separate component. Not only this, the entire focus was to establish that the fire had generated within the generator on account of a spark in the coil of the alternator and not in the Exciter. Learned Counsel invited the attention of the Bench to the specific averments made in the surveyor's report that was insisted upon by the Insurance Co. and was made the basis of the repudiation. Learned Counsel submits that the Insurance Co. never reflected any such objection regarding treating of the Exciter as being a part of the Turbo Generator Equipment, and to the contrary it is the Insurance Co. which had been bifurcating the generator from the Exciter to establish that the source of fire was from within the generator in order to attract the exclusion clause. It is therefore submitted that the Insurance Co. itself had taken a stand which establishes that the exciter was being treated as a separate component by them, and rightly so as the Complainant had lodged its claim clearly stating that the fire had emanated from the Exciter and had caused damage to the generator which is a separate component altogether as was being understood by the Insurance Co. itself. He therefore submits that the fire emanated from the Exciter as per the reports of the experts and there is nothing on record to contradict the source of the fire that had occurred in the manner as described in the experts report quoted hereinabove.

26. It is therefore submitted that once it is established that the fire originated at the Exciter and the other equipments had been damaged due to the fire so propagated, as explained by the experts, the exclusion clause should be read to be not applicable and the claim deserves to be indemnified. The fire was external to the generator as it was sourced and originated from the Exciter.
27. We have considered the submissions raised and we find that the final surveyor submitted its report on 14.09.2012. However, prior to the repudiation, the report dated 30.08.2012 of the experts from BHEL according to the Insurance Co. had already been sent to the surveyor on 06.12.2013. This is evident from the recital to that effect in the repudiation letter itself. A copy of the said letter dated 06.12.2013 sent by the Complainant to the Insurance Co. marking a copy of the said report to the surveyor as well is on record as Annexure 13. Thus, it is correct that the said report was not with the final surveyor when he tendered his report in 2012 but it was with the Insurance Co. when it repudiated the claim on 12.06.2014. The repudiation letter also refers to the surveyor writing to the Complainant on 27.03.2014 about the contradictory opinion as against the report by BHEL. The addendum report of the after having observed the expert report dated 30.08.2012 surveyor is dated 05.10.2015 which reiterates the same stand where after, the Insurance Co reiterated its repudiation on 05.01.2016.
28. The consistent stand of the surveyor is that the fire/flame was coming out of the generator even may be from the Exciter end but not from the Exciter. It also reiterates that the fire originated and was confined inside the generator and did not spread outside. The surveyor has relied on the statement of the Turbo Generator Desk Engineer Mr. S.K.Baral quoted in the preliminary report cum write up that has been filed as Annexure 5 said to have been signed on 09.08.2012 by Mr. SP Nanda and Mr. RS Das Deputy General Managers already extracted hereinbefore.

29. A perusal of the said statement indicates that Mr. S.K.Baral had seen fire coming out of the generator. This statement does not amount to an admission by Mr. Baral that the fire emanated or originated only from the generator. It could have also been caused by any fire spread after it had emanated in the Exciter. Mr. Baral has not been cross examined or questioned by the Insurance Co. The Surveyor and the Insurance Co. for no valid reason have completely negated the opinion of the experts which demonstrates that the fire in all probability emanated from the Exciter that has been explained stepwise by the Original Equipment Manufacturers stepwise opinion dated 30.08.2012 and further substantiated by the affidavit of the Engineer Mr. Sridhar, one of the signatories of the report, that has been filed before this Commission. The contention of the Insurance Co. therefore does not seem to clinchingly contradict the expert evidence and there is no other material to disbelieve the opinion of the experts. Thus, the contention of the Insurance Co. about the fire having emanated only from within the alternator of the generator is selective whereas the contention of the Complainant which is right from the beginning asserting that the fire emanated from the Exciter end supported by the expert opinion dated 30.12.2012. The Insurance co. has not led any evidence or expert opinion to establish the allegation of the failure of the insulation being the rooted cause. Thus, weighing the probabilities of the expert opinion, the same appears to be credit worthy and therefore deserves acceptance. The fire originated at the Exciter end due to vibration as the stator was dislodged, the TG-gear box was uprooted, the coupling was broken and the expansion was dislocated. This was also observed in the preliminary report of the surveyor dated. 04.09.2012 of the spot survey on 09.08.2012.
30. The real contest between the parties which has emerged during the course of the submissions and as assessed by us is, as to whether the Exclusion Clause extracted hereinabove is attracted on the facts as narrated above, even if it is assumed that the fire had occurred inside the generator. The reason is that Learned Counsel for the Complainant is correct in his submission that the Insurance Co. throughout has attempted to maintain that the fire originated from the generator or its alternator and therefore the fire was from within due to an electrical short circuit as such any loss caused due to this incidence was excluded. Learned Counsel for the Complainant is also correct in his submission that this was done to segregate and rebut the origin of the place of fire which was being maintained by the Complainant to have commenced from the Exciter end and which resulted in the destruction of the entire equipment. The Insurance Co., therefore, according to the Complainant was itself treating the Exciter to be a separate machine or unit which according to the Complainant supports the claim of the Complainant.
31. To appreciate this issue reference has to be made to the written submissions which have also been filed on record. It would be apt to reproduce the written submissions on behalf of the Complainant dated 27.04.2023 as contained in paras 1.1 to 1.5 quoted hereinabove:

> *"1.1 The earliest testimonials of the incident indicate that the fire had originated from the exciter end of TG-IV and thereafter spread to the generator, stator, rotor and other apparatus and machinery. The fire is the efficient and active cause of damage to the generator, and no damage would have been caused had there been no fire. There is no intervening agency that acted as an independent source of damage.*

1.2 As per OEM i.e., BHEL's report dated 30.08.2012, ***the fire was caused due to heavy vibrations at the exciter end of TG-IV, and the cause of 'heavy vibrations' does not find a mention in the Exclusion Clause*** *7. On the other hand, fire is an insured peril under the policy.*

1.3 It is well settled that coverage provisions should be interpreted broadly and if there is any ambiguity, it should be resolved in favour of the insured. Per Contra, exclusion clauses must be read narrowly.

1.4 BHEL is the Original Equipment Manufacturer (OEM) of Turbo-generator and they have the expertise to analyse any such failure. Hence, their report prevails over all other reports.

1.5 It is submitted that the generator, Exciter, DAVR and PMG are separate and distinct apparatus/ equipment/ machine having distinct identity and function and can in no way be construed as a single apparatus or machinery. ***Assuming without admitting that exclusion clause 7 is applicable, then only the damage caused to the exciter is liable to be excluded but not the damage caused to other apparatus/equipment/machine such as Generator, Bearing Pedestals, Turbo Supervisory System, CO2 firefighting system, Vibration Probes, Proximitors, Overspeed Probes etc****."*

32. Mr. Pankaj Seth Learned Counsel for the Insurance Co. has submitted that the aforesaid arguments are incorrect inasmuch as the Exciter is a part of and a necessary component of the complete TG-4 Generator Set and therefore the Exciter cannot be segregated or treated as a separate component while applying the Exclusion Clause. As noted earlier, Mr. Seth has submitted that the entire claim is with regard to TG-4 Set and is not a claim in respect of a single component by the Complainant. To appreciate his submission, paragraph 4 of the written arguments filed by him is extracted herein under:-

"*4. That it has been admitted by the Complainant that the fire took place in the generator and not in the exciter, since the latter does not have an 'exciter end'. It is denied that the Generator, Exciter, DAVR and PMG are separate and distinct apparatus/equipment/machine having distinct identity and function.* ***It is submitted that all these form part of a single machinery.*** *It is pertinent to point out that in the communication dated 08/08/2012 sent by the Complainant to the Respondent, it has been specifically stated that "a major breakdown*

took place in our TG-4 (BHEL Make) due to a sudden fire at the excited end", and that "the generator stator and rotor got damaged due to fire inside", thereby clearly admitting that the fire in the instant case in fact took place inside the generator."

33. It is the contention of Mr. Seth that if this entire TG-4 Set is one electrical device designed for generating electricity then a short circuit occurring therein and the loss caused to it internally is specifically excluded and cannot be indemnified. He submits that the loss is not on account of any external fire even if it is assumed that the fire has emanated from the Exciter end as claimed by the Complainant. He further submits that this fire causing loss in TG-4 Set did not spread or cause any damage to any other equipment in its vicinity or surroundings and there is no claim by the Complainant of any such damage to any other object due to the fire which has internally damaged the TG-4 Set. The contention is that in order to make the exclusion clause inapplicable, the damage or loss to any other equipment or fixture apart from the machine itself, would become indemnifiable and not otherwise. Thus, the exclusion clause completely narrows down any such claim caused internally to the TG-4 Set and excludes indemnification by operation of Clause 7 of the Policy.
34. The question, therefore, which needs to be dwelt upon is as to whether the Exciter can be held to be an independent separate machinery existing by itself altogether or the generator can be delinked from the Exciter so as to treat the TG-4 Set as consisting of different components and not a complete unit for the purpose of the Exclusion Clause. Mr. Seth has read out the definition of an Exciter and we have also consulted some definitions from relevant dictionaries to that effect.
35. An Exciter is an equipment relating to an electric activity. It is an agent that arouses or sets into motion another equipment. It is defined to be a small dynamo used for exciting the magnets of an electric generator. The Oxford English Dictionary, 2nd Edition Vol.16 (Clarendon Press) Edited by James Murray defines an Exciter as an apparatus or a machine used as a small auxiliary dynamo to energize the field magnets of a dynamo. It is a device to charge the plates of an electro static generator. Essentially it is a sparking device to generate electric waves. It further describes that earlier a magnet electric machine served as a separate Exciter that was later on dispensed with technological developments whereby the whole or part of the current produced by the armature was used to excite its own electro magnet. Taking a clue from the said definition, if the Exciter is an auxiliary component, then it is something to help, assist, aid or support the operation of the machine. It is, therefore, a facilitator for its operation. The survey reports which are on record do not in any way reflect on the aforesaid aspect but during the course of submissions, Mr. Sridhar who was present at the time of final arguments stated that the equipment in question was supplied as per the specification of the Complainant with a particular type of Exciter as ordered by the Complainant. In his affidavit dated 30.05.2024 already quoted above, he states in para 6 that "an Exciter is intended to supply DC power to the generator rotor for transforming the generator rotor into an electromagnet."
36. Mr. Seth is not incorrect in his submission to the extent that the Exciter is a part of the TG Set which has been insured and it also appears that the Exciter is an essential operational facilitating component for running the generator. It is for this reason that the entire

equipment has been described as a TG-4 Set and as is evident on record, there are four such operational TG units that were installed in the plant of the Complainant that were supplied by the original equipment manufacturers, namely BHEL.

37. The question is can the Exciter be treated to be a split separate component from the generator and as to whether can it be treated as a segregated and separate part of the equipment unconnected or alien to the generator. It is, therefore, only then that it can be treated to be a separate machine in order to construe as to whether the fire emanated at a different place causing loss to the generator or to the Exciter itself.
38. The affidavit dated 30.05.2024 of Mr. Sridhar in para 6 once again states that "A TG Set refers to total equipment in the turbine hall, including the turbine, generator and their machines and apparatus like Exciter, DAVR and PMG. A generator is the main machine which converts mechanical energy into electrical energy."
39. The description of the affected machinery in the incident is given by the final surveyor as follows:-

"1. Stator - Windings scratched/burnt at places, Insulation torn/damaged at places.

2. Rotor - Copper bars uprooted at places got fused and abraided at ends.

3. ***Exciter - Got uprooted*** *and diodes erased/grazed/ abraided.*

4. Bearing- Bearing OK. Housing got dislocated from the foundation bolts."

The said set of equipment was supplied and installed by BHEL in 2010.

40. To further understand the status of attachment of the components of a TG Set, the Complainant has brought on record an article titled "**Turbine Tech: Understanding turbo-generator basics"** by John Jensen, published in Woorward Biz Media on 1st April, 2009. The said article is extracted herein under:-

"*The function of a turbo-generator is to convert rotational mechanical energy into electrical energy. It can be configured with different prime movers such as a steam turbine, a gas turbine in single-cycle or combined-cycle arrangement.*

While most people can understand how a turbine works, the turbo-generator is regarded with a little more mystery. In a generator, invisible forces are at work. According to Faraday's Law of Induction, "An electric current is induced in a conductor in proportion to the rate of change in the lines of magnetic flux." Essentially this means that if there is relative motion between a conductor and a magnetic field, then current will be generated in the conductor. The amount of current generated is proportional to the density of the magnetic field and the speed of the relative motion between the conductor and the magnetic field.

In a turbo-generator this principal manifests itself in a rotating magnetic field (the rotor or field) that generates current in stationary conductors (stator windings). The rotating magnetic field is produced in the rotor by a set of copper windings embedded in slots on the outside of the rotor body. ***DC current (excitation current) supplied to these windings through a set of slip rings or a brushless exciter creates an electromagnetic field that rotates with the rotor****. As the turbine drives the generator rotor, this magnetic field cuts across the stator windings that are mounted in slots on the inside diameter of the stator core. The output from the stator windings is fed to a step-up transformer that adapts the power to grid voltage.*

For the sake of grid stability, control has to be maintained for factors such as frequency and voltage. The frequency of the generator is determined by the grid it's connected to; in the U.S., this is 60 Hz. Active power is used to control the frequency output of the generator. If the load on the generator increases, the turbine slows down. The governor system detects this drop in frequency and reacts by opening the turbine throttle valve to increase power output, and thereby match grid frequency.

Regulating voltage, on the other hand, is achieved by addressing reactive power. The power factor (P.F.) that a generator operates at is a measure of the amount of reactive power that is being produced. When the stator current is in phase with the stator voltage (P.F=1) only active power is produced. Increasing the excitation current causes a phase shift (P.F<1) and some reactive power is produced. This is called "overexcited" or "lagging" mode, and results in increased grid voltage. Decreasing the excitation current causes a phase shift (P.F<1). This is called "underexcited" or "leading" mode and tends to decrease grid voltage. For normal grid operation some reactive power is required to balance out inductive loads (motors, transformers) and capacitive loads (transmission lines) in the system. On the whole, overexcited mode tends to increase system stability. The excitation current that is supplied to the rotor windings controls the reactive power. This can be implemented via an Automatic Voltage Regulator (AVR). An AVR compares output

voltage to a setpoint and adjusts the rate of excitation to maintain the required output voltage.

Generator components

The main components of a generator are the stator frame, rotor, stator core, stator windings and exciter.

Stator Frame: This component supports the stator core and rotor bearings. It also functions to contain the cooling medium, air or hydrogen, as it is circulated through the machine.

Rotor: Made from a steel forging, the rotor's drive end is coupled to the turbine, with the other end carrying the slip rings or a brushless exciter. Axial slots on the outside carry the rotor windings. The windings are made of hard silver-alloyed copper and are arranged in multiple layers that are insulated from each other and from the rotor body. The windings are secured in the slots by wedges that can be made of steel, stainless-steel, aluminium or bronze. Copper leads in the bore of the rotor connect the rotor windings to the slip rings or brushless exciter that supplies the excitation current.

Stator core: The stator core is composed of thousands of pie-shaped 0.5 mm thick laminations. The laminations are arranged in a circle and stacked on top of each other until the full length of the core is built up. The laminations are insulated from each other by a thin layer of insulating varnish. The stacked laminations are then clamped axially and connected by spring supports to the frame. The laminations incorporate slots on the inside diameter for mounting the stator windings. The windings are secured in the slots by fiberglass wedges.

Stator windings: The stator windings are composed of two conductors stacked on top of each other in each of the stator slots. Each conductor, or bar, is connected to other bars at the ends of the stator to form the complete stator winding. The bars are connected to form three independent circuits or phases. Each end of each phase is connected to one of the six terminals of the generator. Each bar is typically built up from dozens of individually insulated copper strands that are arrayed in 2-4 columns. The columns of conductors are twisted, or Roebelled, through the length of the bar in such a way that each strand will occupy each position in the strand columns at least once. This minimizes eddy current losses and circulating current losses in the windings.

The strand columns are insulated from other components in the generator by thick ground wall insulation that is designed to withstand the high voltages generated in the windings.

Exciter: There are two types of excitation systems:

Static excitation*: Power is taken from the generator output. The voltage is stepped down from the generator output, rectified to DC and fed to the brushgear - and from there to the slip rings. This approach has excellent response time under fault conditions. But it may require extra bearings for shaft extension.*

Brushless excitation*: Power is taken from the generator output to supply the stationary field winding. An AC voltage is induced in the rotating exciter winding attached to the end of the generator rotor. The brushless exciter has the advantage of not requiring brushes or related equipment and has lower power requirements.*

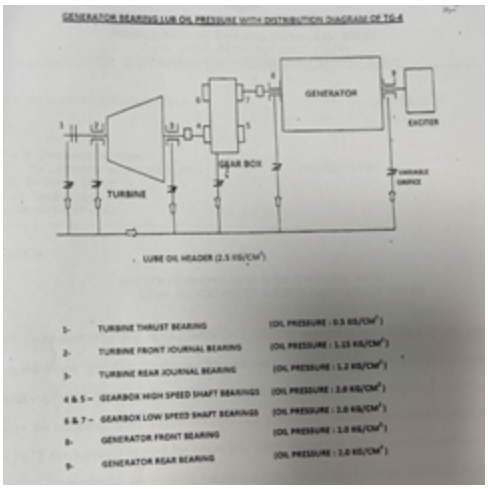
Generator options

Turbo-generators come in a number of "flavors" with different applications favoring a specific type of turbo-generator. The speed of a generator relates to the number of poles and the grid frequency (50 or 60 Hz). A 2-pole, 60 Hz generator, for example, runs at 3,600 rpm and is the general choice for gas or steam turbines in the 40 MW and 1,000 MW. Four-pole 60 Hz generators run at 1,800 rpm and are typically best for generators below 40 MW. They are also used in very large (up to 1,800 MW) half-speed generators, such as those used in nuclear plants.

On the cooling front, there are also many options. These include open ventilation, totally enclosed water/air cooling (TEWAC) and hydrogen cooling. The latter method makes use of a casing pressurized at 4-6 bar and requires shaft seals to maintain pressure. Additionally, rotor windings and stator windings may be directly or indirectly cooled. Indirectly cooled windings conduct heat to the rotor body (rotor windings) or stator core (stator windings) where it is transferred by convection to the cooling medium that is circulated past them inside the generator casing. Directly cooled rotor and stator windings provide passages within the conductors so the heat can be transferred directly to the cooling medium flowing through them. Many stator windings utilize direct cooling with water for better performance.

This article describes in basic terms the general operating principles, design and construction of large AC turbo-generators. Other types of generators will vary in design details but all operate on the same basic principles."

41. The Complainant has also filed a sketch diagram of the TG-4 Set with some technical specifications which is reproduced hereinunder:-



42. The narration about the acquisition of the TG Set-IV in 2010 from BHEL and its components coupled with its operational purpose and its actual function needs to be analyzed for arriving at a correct conclusion upon a judicial approximation of the submissions and the material explaining the technical elements involved. The TG Set-IV seems to be comprising of independent parts assembled together for power generation as a composite equipment supplied by BHEL consisting of a turbine, a generator, a gear box and an exciter. The accident as reported by the Complainant was about the TG-IV Set but at the same time the origin of fire was "from the exciter end" and fire was also seen in the generator.
43. The expert opinion of the OEM as discussed above coupled with the statement of Mr. Sridhar establishes that the cause of the fire was a huge vibration that was possibly locatable to the uprooting of the foundation of the exciter equipment. This appears to have disaligned the rotary function causing the internal rubbing of the exciter causing the fire and then getting propagated elsewhere including the generator. The surveyor has not discussed the impact of vibrations causing the fire. The report of the surveyor simply focuses on locating the fire inside the generator without attempting any analysis of the cause of vibrations or the damage occurring therefrom as elaborately explained by the OEM report dated 30.08.2012. The surveyor admits the contradiction only in the location of the fire but does not discuss the impact of vibration even in the addendum report dated 05.10.2015.
44. The exciter was reported to be completely burnt, the gear box and stators were also damaged, the foundation bolts were sheared and the coupling was also dislocated. Curiously the preliminary spot Surveyor M/s S.K. Das did not mention the damage of the exciter due to fire, except that its stator was dislocated, even though the final Surveyor did mention the machinery affected by fire including the exciter. The experts have also explained the damage to the generator, the exciter and other parts due to fire. The

assessment by the final Surveyor M/s Cunningham does not exclude the damage to the exciter, rather mentions is specifically at Item No.4 of its observations, but for reasons best known to the Insurance Co., they stuck to their opinion focusing only on the source of fire being located inside the generator.

45. The OEM experts have opined that due to high vibration, the exciter rotor rubbed with the exciter stator causing the fire in the exciter that resulted in fire spreading due to oil splashing which propagated to the generator.
46. This sequence indicates that all the equipments were working in unison and the damage occurred almost simultaneously. The main components of the generator have been explained in the article of Mr. John Jensen quoted hereinabove consisting of –

    1. Stator frame
    2. Rotor
    3. Stator Core
    4. Stator windings and the Exciter

47. According to this description, the details of the excitation system indicates two types, one is Static Excitation and the other is Brushless. It appears from the description given in the Surveyors report that the damaged exciter was of BL (Brushless) type. The replaced equipment post-accident in the invoice from BHEL of 2013 also indicates an installation of a Brushless type exciter. Thus an exciter is a necessity for the generator to operate as it is an equipment that is an essential feature that supplies DC current to the windings on the rotor of the generator. This function of the exciter is highlighted in the article of Mr. Gensen quoted above. The DC current is the excitation current supplied to the windings on the rotor of the generator through a set of slip rings or a brushless type which creates an electromagnetic field that rotates with the rotor. It is this magnetic field that cuts across the stator windings that are mounted in slots on the inside diameter of the stator core. The output from these windings is fed forward which is the generated power to be utilized by the plant. Thus the role of the exciter is connected as an indispensable feature for operating the generating system.
48. Mr. Sridhar in his affidavit dated 30.05.2024 quoted above has stated in Para 6 that "TG may or may not have an exciter, since DC current can be given from external sources like static excitation equipment." A combined reading of the article of Mr. Gensen and the affidavit of Mr. Sridhar seems to suggest that Brushless type exciter is attached to the end of the generator rotor but a static excitation equipment is external to the generator. Nonetheless, even though it is a separate equipment that induces excitation current (DC) to help in creating an electromagnetic field through the windings mounted on the rotor of the generator, yet it is a necessity.
49. It is thus evident that an exciter component of any type has to co-exist for the operation of the generator for power production. The issue is, can the exciter be treated as part of the generator or a separate component. It is an essential equipment that exists to run the generator. It is indispensable but it is a component that needs to be coupled and combined

simultaneously but it exists as a distinct separate component. It is not part of the generator but a component that is a necessary external adjunct and is coupled with the generator. It is not an internal part of the generator.

50. From the facts as disclosed, it is evident that neither the preliminary survey report, nor the final survey report or the repudiation letters anywhere refer to this aspect of the exciter either being attached or detached from the generator. It is only in the written submission of the Opposite Party in Para 5 and the oral submission of Mr. Seth that this argument has surfaced about the entire TG Set being treated as one equipment. There is no such recital about this in the survey reports or the letters of repudiation. The argument therefore so advanced by Mr. Seth for the Insurance Co. cannot supplement the reasons that are neither in the survey reports nor in the repudiation letters.
51. The law on this issue was discussed in the case of ***Glada Power & Telecommunication Ltd. Vs. Unite India Insurance Co. Ltd., (2016) 14 SCC 161*** paragraph 13 to 18. The Apex Court discussed the issue of waiver and after referring to the proposition as spelt out in various decisions in the above noted paragraphs it ultimately went on to hold as follows:

> *"18……..Additionally, as has been stated earlier, in the letter of repudiation, it only stated that the claim lodged by the insured was not falling under the purview of transit loss. Thus, by positive action, the insurer has waived its right to advance the plea that the claim was not entertainable because conditions enumerated in duration clause were not satisfied."*

52. The aforesaid ratio found approval by the Apex Court in yet another judgment in the case of ***Saurashtra Chemicals Limited Vs. National Insurance Company Limited, (2019) 19 SCC 7*** paragraphs 11 to 23. Paragraph 23 of the said judgment is extracted hereinunder:

> *"23. Hence, we are of the considered opinion that the law, as laid down in Galada [Galada Power & Telecommunication Ltd. v. United India Insurance Co. Ltd., (2016) 14 SCC 161 : (2017) 2 SCC (Civ) 765] on Issue (2), still holds the field.* ***It is a settled position that an insurance company cannot travel beyond the grounds mentioned in the letter of repudiation****. If the insurer has not taken delay in intimation as a specific ground in letter of repudiation, they cannot do so at the stage of hearing of the consumer complaint before Ncdrc."*

53. The matter further came for further consideration once again in the case of ***New India Assurance Co. Ltd. & Ors. Vs. Mudit Roadways, 2023 SCC OnLine 1532*** where the same ratio was reasserted in paragraphs 32 to 34 as follows:

> *"**32.** The relevant portion of the letter of repudiation is reproduced below:*

"... the insured premises not affected due to alleged fire. The above mention premises where the loss occurred due to alleged fire is not insured under the Policy. Thus the alleged loss dogs (sic) not fall within the purview of the policy....

The root cause of the fire incident was due to the negligence on the part of the Management in not taking adequate precautions when the construction work was going on that too in a secured customs bonded warehouse where many hazardous chemicals were stored : The alleged cause of fire is hot (sic) covered under the policy...."

The Insurance Company in their letter mentioned two specific grounds to repudiate the claim:

(i) that the location of fire was part of the premises not covered under the insurance policy, and

(ii) that there was negligence on the part of the insured in carrying out repairs at the roof of the warehouse which caused the fire.

***33.** Notably, in earlier cases like Galada Power & Telecommunication Ltd. v. United India Insurance Co. Ltd. [Galada Power & Telecommunication Ltd. v. United India Insurance Co. Ltd., (2016) 14 SCC 161 : (2017) 2 SCC (Civ) 765] and Saurashtra Chemicals Ltd. v. National Insurance Co. Ltd. [Saurashtra Chemicals Ltd. v. National Insurance Co. Ltd., (2019) 19 SCC 70 : (2020) 4 SCC (Civ) 298] , **it was declared that new grounds for repudiation cannot be introduced during the hearing if they were not included in the repudiation letter. This legal principle was reiterated** in JSK Industries (P) Ltd. v. Oriental Insurance Co. Ltd. [JSK Industries (P) Ltd. v. Oriental Insurance Co. Ltd., (2022) 17 SCC 340 : 2022 SCC OnLine SC 1451] : (JSK Industries case [JSK Industries (P) Ltd. v. Oriental Insurance Co. Ltd., (2022) 17 SCC 340 : 2022 SCC OnLine SC 1451] , SCC para 12)*

"12. Mr Gopal Sankaranarayanan, learned Senior Counsel for the appellants has argued both on substantive and procedural points to assail the aforesaid orders. His first submission is that the insurance company cannot resist a claim petition on grounds beyond those cited by them while repudiating a claim. In support of this argument, a decision of this Court in Saurashtra Chemicals Ltd. v. National Insurance Co. Ltd. [Saurashtra Chemicals Ltd. v. National Insurance Co. Ltd., (2019) 19 SCC 70 : (2020) 4 SCC (Civ) 298] has been cited. In this judgment, it has been held : (SCC p. 78, para 23)

'23. Hence, we are of the considered opinion that the law, as laid down in Galada [Galada Power & Telecommunication Ltd. v. United India Insurance Co. Ltd., (2016) 14 SCC 161 : (2017) 2 SCC (Civ) 765] on Issue (2), still holds the field. It is a settled position that an Insurance Company cannot travel beyond the grounds mentioned in the letter of repudiation. If the insurer has not taken delay in intimation as a specific ground in letter of repudiation, they cannot do so at the stage of hearing of the consumer complaint before Ncdrc.' "

34. Canvassing supplementary arguments during the hearing, (beyond those in the insurer's repudiation letter), is explicitly prohibited. Consequently, it is held that the insurer cannot introduce additional reasoning beyond those detailed in their letter, to justify the repudiation."

54. Mr. Seth has advanced his submissions relating to the claim not being acceptable on the ground that the entire equipment is one which nowhere finds place or even a remote mention either in the survey reports or in the letter of repudiation extracted hereinabove. Thus, the aforesaid argument stands rejected on the legal proposition as propounded in the ratio of the Apex Court judgments quoted above. .
55. Even on facts as has been explained in the report of the experts dated 30.08.2018 and is also evident from the description of the article authored by Mr. John Jenson and illustrated by the diagram extracted hereinabove. It is evident that the Turbo Generating Set may have been purchased and got assembled but it has four separate components comprising of a turbine, gear box, a generator and an exciter.
56. It has already been observed by us hereinabove that the report of the experts is authentic as it contains a specific empirical analysis of the cause of the fire whereas the report of the surveyor has not analyzed the same. We would therefore in our humble approximation accept the report of experts with regard to the cause of the fire being vibrations, the location of the fire in the exciter and then its propagation and travelling up to the generator. We have based our conclusions on the analysis made hereinabove and we therefore find that the cause of fire was an external element of an uprooting of the equipment due to heavy vibrations that ultimately resulted in causing the sparks and setting the fire in the exciter which travelled up to the generator. The damage was therefore not only because of a simple spark generated inside the alternator of the generator as alleged by the surveyor. The expert opinion and the narrative of incidents stepwise as well as the disclosure as well as the evidence led by the complainants clearly indicates the fire emanating from the exciter end which was the case of the Complainants right from the beginning and stood confirmed by the experts report. As noted above the report of the experts at the earlier stage of the submission of the survey report had not been shared with the surveyor but after it was shared, the surveyor had the occasion to assess the same but he reiterated his position in the addendum report maintaining his earlier stand without giving any reason to contradict the analysis of the experts. We therefore find that the loss caused does not stand excluded under the exclusion clause which does not in any way exclude fire caused on account of vibrations. This was not an internal spark but it was a

result of the heavy vibrations that the roter and the other components rubbed causing the spark of fire at the exciter end that propagated towards the generator. The exclusion clause therefore would not apply and even otherwise once we find that vibration is not excluded, we would also invoke the rule of Contra Preferentem to remove any doubt of ambiguity in the exclusion clause and extend the benefit to the complaint. It is not the case of the Insurance Co. that the machine was overrun, damaged or excessive pressure or any defect of self-heating as mentioned in Exclusion Clause No.7. All the parameters of the TG Set IV as noted during operations just before the incident were recorded as normal. The Insurance Co. was therefore was not justified in repudiating the claim on the ground that the fire was located internally only inside the generator. The exclusion clause would therefore on the facts of this case would not come to the aid of the Insurance Co. and the claim would be indemnifiable.

57. The mention of the fire originating from inside the generator by the preliminary surveyor as well as by the final surveyor are therefore, for all the reasons stated hereinabove, not the correct causes as mentioned in the letter of repudiation and deserves rejection.
58. The final survey report has made the calculations and has assessed the gross assessed loss, the depreciation, the salvage value of the equipment and after calculating the deductions and adjustments, the net adjusted loss is Rs.13,25,37,131/-. We find the calculations made by the final surveyor to be justified and the complaint is accordingly allowed. A sum of Rs.13,25,37,131/- as per the assessed report of the surveyor is indemnifiable and is hereby accordingly directed to be paid to the Complainant Co. within a period of three months together with 6% thereon with effect from the date of loss that is 08.08.2012 till the date of actual payment.

59. The complaint is accordingly allowed.

.....J
A. P. SAHI
PRESIDENT

.....
DR. INDER JIT SINGH
MEMBER