

**BEFORE THE NATIONAL GREEN TRIBUNAL  
EASTERN ZONE BENCH, KOLKATA**

.....

**ORIGINAL APPLICATION No. 346/2013/PB/9/EZ**

**WITH**

**M.A. NO.1088/2013/EZ & M.A.06/2014/EZ**

**M.A. NO. 85/2015/EZ & M.A. NO.828/2016/EZ**

**IN THE MATTER OF:**

**Aabhijeet Sharma,  
S/o Late Sh. D. Sharma  
Asham Public Works,  
R/o 5-A, Subansiri Apartment  
Zoo Road, Tiniali, Geetanagar  
Guwahati, Assam**

**.....Applicant**

**V e r s u s**

- 1. Union of India,  
Through the Secretary,  
Ministry of Power, Govt. of India,  
Sharan Shakti Bhawan  
New Delhi-110001.**
- 2. Union of India,  
Through the Secretary,  
Ministry of Environment & Forest,  
Govt. of India, 104, New Moti Bagh,  
New Delhi-110001.**
- 3. Chairman-cum-Managing Director,  
NHPC Ltd., Sector-35, Faridabad  
Haryana-121003.**
- 4. State of Assam  
Through the Chief Secretary,  
Govt. of Assam, Dispur, Guwahati,  
Assam.**
- 5. State of Arunachal Pradesh  
Through the Chief Secretary,  
Govt. of Arunachal, Itanagar  
Arunachal Pradesh**
- 6. Ministry of Water Resources  
Sharan Shakti Bhawan  
Rafi Marg,  
New Delhi.**

7. Brahmaputra Board  
Guwahati, Assam.

.....Respondents

**COUNSEL FOR APPLICANT:**

Mr. Sanjay Upadhyay, Advocate, Ms. Eisha Krishen, Advocate

**COUNSEL FOR RESPONDENTS:**

Mr. S.D. Sanjay, Addl. Solicitor General, Mr. Kushagra Shah, Advocate,  
Respondents No. 1 & 6.

Mr. Gora Chand Roy Choudhury, Advocate, Ms. S. Roy, Advocate,  
Respondent No. 2.

Mr. K.P. Pathak, Sr. Advocate, Mr. Ajit Pudusery, Advocate, Respondent  
No. 3

Mr. Gautam Choudhury, Advocate, Mr. Asit Kumar Hazra, Advocate & Mr.  
Mrinal Kumar Maity, Respondent No. 4.

Mr. A.D.N. Rao, Advocate, Respondent No. 5

Mr. Kallol Guhathakurta, Advocate & Md. Sharique Afjal, Advocate  
Respondent No.7

AND

**ORIGINAL APPLICATION No. 109/2017/EZ**

**IN THE MATTER OF:**

Tularam Gogoi,  
Borbam Dihingia  
P.O. Deori Borbam (Bordoloni),  
P.S. Gogamukh,  
District-Dhemaji,  
Assam.

.....Applicant

**V e r s u s**

1. Union of India,  
Through the Secretary,  
Ministry of Environment, Forest & Climate Change,  
Govt. of India,  
Jor Bagh Road,  
New Delhi-110003.

2. State of Assam,  
Through its Chief Secretary,  
Assam Sachivalaya Complex  
Dispur, Guwahati,  
Assam-781006.

3. NHPC Ltd.  
Through its Chairman and Managing Director,  
NHPC Office Complex  
Sector-33, Faridabad-121003 (Haryana)

.....Respondents

**COUNSEL FOR APPLICANT:**

Mr. Ritwick Dutta, Advocate, Ms. Sreeja Chakraborty, Advocate & Ms. Sayanti Sengupta, Advocate

**COUNSEL FOR RESPONDENTS:**

Mr. S.D. Sanjay, Addl. Solicitor General, Mr. Gora Chand Roy Choudhury, Advocate, Mr. K. Ravish, Advocate and Ms. S. Roy, Advocate for the Respondent No. 1.

Mr. Maninder Singh, Addl. Solicitor General, Mr. Ajit Pudusery, Advocate, and Mr. Prabhas Bajaj, Advocate, for the Respondent No. 3.

Present:

**Hon'ble Mr. Justice S.P. Wangdi, Judicial Member**

**Hon'ble Prof. (Dr.) P. C. Mishra, Expert Member**

Reserved On: 11.08.2017

Pronounced On: 16.10.2017

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1. Whether the Judgment is allowed to be published on the net? : Yes
  2. Whether the Judgment is allowed to be published in the NGT Reporter? : Yes

## **JUDGMENT**

### **PER JUSTICE S.P. WANGDI, JUDICIAL MEMBER**

For convenience, both these OAs are taken up together for disposal as they are inter-connected.

#### **O.A. 346/13/PB/9/EZ with connected MAs :**

2. The Applicant, a social activist, had earlier filed a writ petition in the Hon'ble Supreme Court being WP (Civil) 359/2012 under Art. 32 of the Constitution of India seeking redressal for the rights of riparian tribal people downstream of Subansiri Lower Hydro Electric Project (SLHEP for short) and for the survival of the ecology of the Subansiri river which is also a home for the Gangetic Dolphins, a national animal. The writ petition was later withdrawn on 9.9.2013 by the Applicant and on the same day, the present Application was filed in the National Green Tribunal.

3. The case of the Applicant is that river Subansiri, one of the principal tributaries of Brahmaputra river, originates from Tibet at an altitude of 5340 m and flows in a southernly course cutting through Arunachal Pradesh before entering Assam at Dulongmukh in Dhemaji district and thereafter flows along 130 Km in the plains of Assam before merging with the river Brahmaputra near Jamugurighat. The Subansiri basin is the largest river system of the State of Arunachal Pradesh covering more than 19,000 sq. km. in the central part of the State.

4. It is stated that the river is a storehouse of fishes, turtles and dolphins as well as other aquatic lives and supports an enormous diversity of life by providing a range of habitats. It is a dynamic river and comprises of many

different ecological niches with a delicate ecology that depends on regular cycle of floods and lean period flows. The biota that populates the river, the flood plains, wetlands and riparian zones is said to have evolved to adopt the river's own peculiar flow pattern in flood and lean seasons, slow and fast current. It is stated that a major UGC Research Project No. 35-124/2008 (SR) 2008 on the present environment and bio-diversity of Downstream of Subansiri River Basin, had arrived at a detailed findings. Some of those are stated as under :

a 169 fish species which include 15 International Union of Conservation of Nature (IUCN) endangered species.

b IUCN's red listed Gangetic Dolphins (*Platanista Gangetica*) with a high destiny in Subansiri (32 numbers in 110 km stretch, 2010)

c 2 IUCN's red listed turtles amongst many varieties found in the river.

The river Subansiri is considered as a safe haven for the river Gangetic Dolphins (*Platanista Gangetica*), declared as a State and National Aquatic Animal in 2008 and 2010 respectively. In certain areas, local fishermen take help of these dolphins for co-operative fishing; - a Traditional Indigenous Knowledge System (TICS) technique where both fishermen and dolphins complement each other and benefit accrues to both the fishermen and the dolphins. A true copy of report on fish diversity of River Subansiri based on the UGC major Research Project No. 35 – 124/2008(SR) - 2008 is annexed herewith and is marked as **Annexure P-2.** “

5. Besides the above, the Applicant has also highlighted the details of the rich ecology of the river and its basin which we may reproduce below :-

“iii. That river Subansiri and its associated wetlands, riverbank and sandbars harbours rich \*avifauna diversity also. A study indicates as many as 119 species of both resident and migratory birds.

iv. That river Subansiri comprises of many different ecological niches that sustains a diverse biota that popular the river with 169 fish varieties, many varieties of turtles, and the National Aquatic Animal the Gangetic

Dolphins with a high density in the river, phytoplankton's zooplanktons etc. making Subansiri as the most bio-diverse river of India.

v. That the life of riparian people of the Subansiri by its bank for the entire lower 130km of the river till it meets the Brahmaputra, are fully entwined with the river. They are mostly Mising Tribal people. They live by the river. They know the pulse of the river. Their houses are on stilts and the annual floods that inundate the Subansiri basin do not affect them. Their rich culture and folklore is entwined inseparably with the river.

vi. That the livelihood of over one lakh people is directly connected to the river. 'Boating' is a major source of earning and employment. The people use the river as a means of communication. Boats ferry people from one bank to the other in Ferry crossing points. Boats carry boulders, sand and other materials to the Vaishnavite Heritage Island of Majuli in Brahmaputra. Fishing is also a major occupation – not only in the river but in the wetlands that abound in the riparian zone of the river which is nourished by the river during the floods. Collection of boulders, sand driftwood gives livelihood to many.

Livelihood options of downstream riverine people of Subansiri can be categorized as:

Sand and ground mining, driftwood collection, river transportation business, agriculture in the river flood plain, fishing, commodities from the river,- food, fibre, water, building material from reeds etc. supporting livelihood of many rural communities. UGC Major Research Project F33-137/207SR/2008 deals with these livelihood aspects of the riparian people downstream of the SLHEP Dam in details in Chapter 8.....”

6. It is stated that the proposed SLHEP located at the Assam Arunachal border with a 116 m high dam to generate 2000 mw of power has given rise to an ominous situation that threatens the ecology of lower Subansiri river along with the likelihood of disruption of the lifestyle and lives of riparian people. The Applicant has expressed grave concern, particularly on the following aspects :-

- i) The location of the dam is in a highly seismic zone (Zone-V) which assumes significance in view of history of an earthquake

of 8.6 in the Richter scale having rocked the region in the year 1950 with its epicentre very near to the dam site;

- ii) The project which is claimed to be “Run of the River” (ROR) scheme will hold up the water flow for 20 hours of the day when the project is “off grid” and would create flood like condition of the downstream for peak load generation of 4 hours by eight turbines. It has been projected that average flow will remain the same for 24 hours and gives a misleading impression that the flow of water at any given point of time will also be flowing out through the turbines in the winter months thereby keeping the river flow unaltered when actually, the river will be dry for 20 hours as there will be only 6 cumec of discharge during such period;
- iii) The fate of the riparian people of the Subansiri river constituted by the Mising tribes who are protected by an law will be under serious threat due to throttling of the bio-diversity of the river;

7 It is averred that in this application, the petitioner is not challenging the construction of Subansiri Lower Hydro Electric Project (SLHEP) dam per se but is confined to the downstream impact of the dam on the ecology of the river and the riparian people.

8. It is stated that as the National Water Policy, 2005, envisages water as a prime national resources in planning and operation of the systems and benefits including drinking water and ecology along with hydropower, irrigation, etc. The SLHEP has been cleared in violation of Articles 48A and 21 of the Constitution of India as well as National Water Policy, 2005.

9. Release of water without any “sustainable flow” required for survival of the ecology of the river would jeopardise the livelihood prospects and avenues of downstream riparian people. The sustenance flow is the

minimum flow of water during the lean period that forms the basis of eco-system of any river and, therefore, it is necessary to have such flow to sustain its biota evolved over centuries because of the flow pattern of the river. Thus, it is incumbent that such release of water must be maintained for the survival of the river as well as of gangetic dolphins.

10. Release of 6 cumec of water as envisaged by the MOEF and NHPC Ltd. during the “off grid” period of the project would be in violation of the articles 21 and 48A of the Constitution and the requirement of the National Water Policy, 2005. The stand of the NHPC that the flow of water during the lean season in the downstream of the dam will be replenished by various tributaries is illogical as those tributaries, which are small, run dry during the winter season making no contribution to the Subansiri river during the lean months. It is alleged that the NHPC’s announcement for release of 225-250 cumec water as the sustainable flow for survival of the downstream ecology of the river through turbine was based on uncertain foundation. Release of 320 cumec water as recommended by the Expert Group set up by the NHPC as the minimum sustainable flow is also unreliable as it is 450 cumec that would be necessary for the survival of the Gangetic Dolphins. Sustainable flow necessary in lean months as per the UGC’s Major Research Project was 450-550 cumec to regulate the downstream ecological balance and to nourish the Subansiri river and its eco-system. Even as per the Water Resources Department, Govt. of Assam, the minimum average flows of river was 854 cumec for the period 2008-2010 which in the year February 2009 alone was 837 cumec.

11. Various other reports were cited in respect of maintenance of minimum sustenance flow by the applicant but we need not deal with those in detail as it is the case of the Applicant that even by release of 450 cumec water as the minimum sustenance flow, the fate of the dolphins would hang in balance due to severe ecological imbalance caused by construction of the Subansiri Dam.

12. Sustenance flow from the Dam as per the Applicant ought to be such that the flow from the Dam should be without human control or intervention if the ecology of the river downstream of the dam is to be maintained. Release through turbines for the purpose would dry up the river from the dam to the Power House Point, a distance of about half a Kilometre, as the water through the turbine will be released only through the Power house to the river. It is thus submitted that to avoid environmental catastrophe, the sustenance flow water must be released through an opening of the dam of appropriate size and location which ought to be automatic without any human control. It is also suggested that a fish ladder can be placed in the dam as a permanent migration route of the fishes, in particular Golden Mahseers, for breeding which has also been suggested by the Central Water Commission in its Environmental Impact Study of Subansiri river sub-basin (revised interim report-Vol-I), should be arranged. According to the applicant, there should be no provision of switching off the turbine meant to maintain continuous river flow.

13. Although all mandatory environmental and other clearances have been obtained for construction of SLHEP which, according to the Applicant, are purely legal steps, those are deeply flawed as it overlooked (i) the

downstream impact of the project beyond 10 KMs; (ii) leaves the river with only 6 cumec water flowing for 20 hours during the “off grid” period of the project; and (iii) the threat caused to the existence of gangetic dolphins.

14. Limiting the Environmental Impact Assessment (EIA) study to 10 Km downstream from the dam was pointed out by the Hon’ble Supreme court in writ petition No. 359/2012 as one of the serious lapses in the EIA study. Awarding the work of the project on contract by the NHPC even before obtaining EC as pointed by the CAG, substantiates the apprehension of the applicant that the project is one for “power at any cost and profit for the Developer” without any thought on the damage that may be caused to the environment, biota and adverse downstream impact of the Dam as highlighted above.

15. As per the Applicant, the following irrefutable facts clearly establish that all activities of the MoEF/NHPC Ltd. are only for Power only Dam with no consideration to the ecology downstream and for the riparian people :

(i) Commencement of substantial work at the dam site by NHPC Ltd. even before mandatory clearances were obtained with MoEF blessings.

(ii) Limiting the EIA study by MoEF only up to 10 km from the dam site knowing fully that the downstream Subansiri is home to Gangetic Dolphins which are in the IUCN’s red list since 2001.

(iii) MoEF direction to release only cumec of water for 20 hours or so when the project will be off grid, i.e., no release of any sustenance flow for the river.

(iv) Repetition by NHPC Ltd. that tributaries downstream of the dam contribute 38 cumec of water in the lean period to Subansiri which is a deliberate untruth as a field visit on 03/02/2013 established that all the tributaries practically dry during that season, which is a verifiable fact.

(v) Complete disregard by MoEF to the National Water Policy 2005 which stipulates ecology and drinking water amongst other aspects as priority segments of any project.

(vi) These facts clearly establish the intentions of MoEF, Ministry of Power and the NHPC Ltd., which is only an “execution arm” of the Government of India, to exploit the river Subansiri through SLHEP for generation of power only by adopting any means including killing the river, when there is more than enough water available in the river during the monsoon period for storage both for sustenance flow of the river and generation of power as per NHPC Ltd’s scheme of things. That in this context as well in the context of sustenance, water must be released automatically without any human control.

16. The Applicant goes on to state that information received by him under the RTI Act revealed that the dam is now at an elevation of 138 m and that the work on the project has been stopped since December, 2011 due to public protest for various reasons more particularly, the safety of the dam, non-release of sufficient water during the lean months, fear of destruction of agricultural land due to release of “sediment flushed” flood from the dam as it happened earlier in the Ranganadi Hydro Electric Project. It is further emphasised that sustenance flow of water must be released automatically without human control through diversion tunnels or by any other suitable

mechanism which is automatic, i.e., without any human control, also suggesting construction of an underpass as permanent fixture to be incorporated in the dam which would also guarantee that there is no disconnection of the river between the dam and the trail race release point which is at 500 m downstream of the dam. Creation of additional storage capacity downstream of the dam as recommended by the Expert Group has been stressed upon as, according to the Applicant, it would augment the potential of the power generation since part of the sustenance water release will be taken care of by the lower pondage. That the embankment which has been scientifically planned and proposed only upto 15 Km downstream ought to be extended to the confluence of Brahmaputra in order to protect agricultural fields due to release of severe flush sediments.

17. Based on the above submissions, the Applicant has sought for the following reliefs:

- a. Pass an order directing the NHPC Ltd and other respondents to release the minimum sustenance flow of water of  $450 \text{ cu}^3 \text{ m/sec}$  from the SLHEP Dam all through the year for ecological sustenance of the river which will keep the river ecologically healthy specially in the 4-5 months of lean period of winter.
- b. Pass an order directing the respondents to release this sustenance water of  $450 \text{ cu}^3 \text{ m/sec}$  of water 'automatically', without any human control over it through an 25 sqm opening at an appropriate level of the dam, as this sustenance water cannot be shut off even for a short while through human error or in a mala fide way, or due to various forces majeure situation.
- c. Pass an order directing the respondent NHPC Ltd. and others that their 'power generation' in the lean months will be subservient to release of the minimum sustenance flow of  $450 \text{ cu}^3 \text{ m/sec}$  and power can be generated as per availability of

water in the lean months after release of the 'sustenance flow' as NHPC Ltd. did not make any provision to store additional water for the 'sustenance flow' even though enough water is available in Subansiri in the year which flows down unutilized during monsoon period which can still be utilized fully or partially by creating a reservoir downstream of the dam as suggested by the Environment Group

- d. Pass an order directing the respondents NHPC Ltd. and other to strengthen the existing embankments and construct new ones upto the confluence of Brahmaputra so that 'sand' is not deposited in the agricultural fields making them unfit for cultivation in a scientific manner;
- e. Pass an order directing the respondents MoEF and NHPC Ltd. to reassess the downstream impact of the proposed middle and upper Subansiri dams upto Brahmaputra, and not just 10KM downstream of the proposed dams only and to release, from the middle and upper Subansiri dams the minimum sustainable flow year round needed for the river to survive ecologically in Arunachal and the plains of Assam;
- f. Pass an order directing the respondents not to commission the dam without completion of the downstream protection upto Brahmaputra through embankments in a scientific way so that sand deposition in the agricultural fields do not occur during sand flushing operation of the dam in a high flood situation.
- g. Issue an order directing the respondents, NHPC Ltd., MOEF, GOI, to stay the construction work of the dam till disposal of the petition before the Hon'ble National Green Tribunal so that provision for an underpass/opening for automatic release of the sustenance water can be incorporated in time.
- h. Pass any such further order (s) as the Hon'ble Court may deem fit and proper under the facts and circumstances of the case.

18. The OA is strongly resisted by the Respondent No. 2, MOEF, Respondent No. 3, NHPC, the respondent No. 4, State of Assam and the

respondent No. 5, State of Arunachal Pradesh. The Respondent No. 1, the Ministry of Power, Govt. of India, did not file a separate affidavit but chose to rely upon the one filed on behalf of the MOEF. They have taken objection only to certain aspects of the OA which we shall deal later. We may, therefore, first deal with the affidavit-in-opposition filed on behalf of the Respondent No. 5, the State of Arunachal Pradesh.

19. Before dealing with the OA in its merit, the Respondent No. 5 has raised certain preliminary objections on the maintainability of the application firstly, on the ground that the applicant has no *locus standi* as he does not fall within any of the categories of persons referred to under Sec. 18 of the National Green Tribunal Act, 2010, and secondly, that the application is barred by the law of limitation as prescribed under Sec. 14(3) of the NGT Act, 2010 which provides that no application for adjudication of any dispute shall be entertained by the Tribunal unless it is made within a period of six months from the date on which the cause of action for such dispute first arose but could be further extended by 60 days only if the Tribunal was satisfied that the applicant was prevented by sufficient cause from filing the application within the period prescribed.

20. As per the Respondent No.5, the SLHEP was environmentally cleared by the MOEF in 2003 after having been cleared by the Central Water Commission and the Central Electricity Authority and after carrying out EIA study and submission of EMP reports including holding of public hearing at the project area. That implementation of the SLHEP was taken up after obtaining statutory clearances. A Joint Steering Committee constituted in consultation with the Govt. of Assam by the NHPC Ltd. in April, 2011 also had

submitted its report on the terms of reference referred to it which included examination of the recommendations of the Expert Group (Assam) on the downstream impact study and advise on its feasibility for implementation and to suggest site specific remedial measures with respect to the project. The safety and sustenance of endangered species and other aquatic life were considered by formulating Environmental Management Plan (EMP) and also while according Environmental clearance by the MOEF & CC, Govt. of India.

21. It is submitted that studies on the status of flora and fauna in the submergence area and on the migration of fishes in river Subansiri and creation of hatchery were conducted in compliance to the EC conditions for the project. That as per the technical report on the project, it was estimated that there were about 264 dolphins reported in the entire Brahmaputra river system of which only 8.7% was in Subansiri river and, according to the Respondents, the cause of mortality and threat of Gangetic Dolphins were primarily fishing by catch, accidental killing due to gill net entanglement, poaching, population fragmentation through water development projects, water pollution, over exploitation of fish fauna and because the Mising tribe of Eastern Assam killed dolphins for meat and of the Western Assam for oil used as a bait to catch fish and for treatment of different rheumatic diseases.

22. The SLHEP with installed capacity of 2000 mw would generate power of 7422 MU in 90% dependable year and was initially taken up for investigation by the Brahmaputra Board which had proposed a 257 m high rock fill dam at Gerukamukh in 1983 which was later reduced to 116 m. In May, 2000, as per the decision of Govt. of India, the project was handed over to the NHPC Ltd. retaining the dam height at 116 m and was later cleared by

the Central Water Commission (CWC) and Central Electricity Authority (CEA). The MOEF having granted Environment Clearance (EC) in the year 2003 and the Techno-Economic Clearance accorded by the CEA in January 2003 for 2000 mw installed capacity as a peaking station with availability of minimum 4 hours peaking during the lean season, construction work on project was taken up in the year 2005.

23. In order to allay the apprehension expressed by the people in the vicinity of the project relating to downstream impact of the project, a comprehensive downstream impact assessment study was commissioned by the NHPC Ltd. in May 2008 through the Guwahati University in association with Dibrugarh University and IIT, Guwahati. The report submitted by the Expert Group in March, 2011 made certain recommendations relating to design and safety of the dam and maintenance of minimum discharge in the river by running at least one unit continuously for sustenance of river ecology and ground water recharge. In January 2011, the Planning Commission constituted another committee called the Technical Expert Committee (TEC) consisting of Dr. C.D. Thatte, and Dr. M.S.Reddy, former Secretaries, Ministry of Water Resources, Government of India, to examine the technical aspects as well downstream impact of the SLHEP. A study undertaken as per the recommendation of the TEC relating to maintenance of minimum discharge in the river by running at least one unit continuously on the demands/peaking/firm power need of the dependent States, showed that there was no shortage either in peak or energy in the North Eastern Region corresponding to operation of one unit of Subansari Lower Hydro Electric Project with 250 mw running on a continuous basis and remaining 1750 mw

in peaking. The NHPC Ltd. agreed to operate one unit continuously at part load for 24 hours a day. It was thereafter that the Joint Steering Committee was constituted by the NHPC in April 2011 as desired by the Govt. of Assam in March 2011 and Govt. of India in April 2011. The Joint Steering Committee (JSC) consisted of members from the CWC, Water Resources Dept., Govt. of Assam, Brahmaputra Board, IIT, Roorkee, IIT, Guwahati & NHPC Ltd. However, IIT, Guwahati expressed their inability to be part of the JSC as two of its faculty members were members of the Expert group that had carried out the downstream impact study for SLHEP. Later, as per the TEC constituted by the Planning Commission, a representative of the Govt. of Arunachal Pradesh was also included in the JSC to examine and submit a report on the following Terms of Reference :-

- (a) To examine the Part-II Recommendations of the Expert Group Report (EG) on Downstream Impact Study and advise on its feasibility for implementation with respect to Subansiri Lower HE Project (SLHEP) and suggest site specific remedial measures with physical and financial details.
- (b) To examine the issues related to flood in the downstream areas of Subansiri Lower HE Project and advise feasible and practicable ways for flood moderation, flood mitigation and flood protection in the downstream areas.
- (c) To examine the problems of bank erosion and sediment control due the Subansiri Lower HE Project and device feasible and practicable ways for its management. Further, as desired by the Ministry of Power, GOI (MoP), issue relating to construction of regulation pond downstream of Subansiri HEP was also examined by the JSC in addition to its TOR.

24. The JSC recommended release of downstream flow in the range of 225 cumec to 250 cumec by running one unit continuously for sustenance of the river throughout the year. NHPC Ltd. agreed to run one unit of 500 mw on part continuously for 24 hours a day in the operation of the project. The JSC noted the observations of the Brahmaputra Board that the minimum discharge observed at Gerukamukh was 188 cumec and the minimum 10 daily discharges in approved water availability series for Subansiri Lower Project, was 234 cumec. The observation of Brahmaputra Board was made in its report on 20.02.1979 that led the JSC to recommend the flow in the range of 225-250 cumec in the manner stated above which the NHPC had accepted. It is further stated that there are a number perennial tributaries flowing into the Subansiri river downstream of the dam that augment the Subansiri river. Apart from the above, release of minimum 6 cumec of water, as per EC condition of MOEF, was required to be maintained continuously during the lean season. As the 500 m distance between the tail race channel of the project and dam toe was very short, it would be filled by the back water flow and the distance would not dry up and 225-250 cumec would be maintained.

25. It is further explained that the water released from the Power house during peaking shall flow in the river and reduce gradually over a period which would be absorbed in the river and again be augmented by the next cycle released during peaking. For this reason, it is stated that there would not be any significant change in the level of existing water depth due to the project. The dolphin habitat had been reported to be prominent near the confluence of Subansiri and Brahmaputra which is far from the dam in the downstream stretch where the water depth is governed by the water level in

Brahmaputra. Moreover, according to the Respondent, Subansiri river contributes only 10% of the discharge in the mainstream of Brahmaputra river.

26. It is stated that construction of SLHEP will benefit people including the riparian tribal people with power generation, flood control and several other benefits. As per the JSC, the NHPC Ltd. will maintain the reservoir level at 190 m during most of monsoon season which will provide cushion of 15 m below Full Reservoir Level (FRL). As the SLHEP is a run of the river project, the inflow in the reservoir will be passed on/released through the spillway as the storage capacity is about 442 M cumec between elevation 190 m and EL 295 m (FRL) which would contain/delay flood for some time.

27. Since the peak inflow from the dam would not be more than peak inflow during floods, there should be no concern for the downstream people for any dam induced flood. As the outflow flood from the dam would be attenuated/moderated/delayed up to some extent, the downstream people will also be benefitted by way of flood control. In order to provide additional flood cushion, the height of the dam would require to be increased which was not recommended by the Expert Group which had rather suggested in its reduction. Since the minimum flow would be maintained during the day, the minimum downstream discharge of 225-250 cumec will be maintained ensuring sustenance of the downstream bio-diversity and riparian rights of the indigenous people.

28. The downstream regulating pond highlighted by the Applicant, according to the respondent No. 5, is not envisaged by the CEA. Even as per

opinion of the JSC provision of regulation pond in the downstream is not required for maintaining minimum discharge when one turbine was in continuous operation. That apart, regulation pond was likely to affect the functionality of energy dissipation arrangement of SLHEP. However, it was observed by the JSC that if required, regulation pond may be constructed as a separate project further downstream of SLHEP.

29. That the JSC also recommended for carrying out necessary protection works 15 km in the downstream of the dam site and to raise suitable protection embankment beyond the 15 km. The dam break analysis being part of EMP report had been duly considered by the MOEF while according EC for the project. The safety of the dam was also examined by the CEA before according Techno-Economic Clearance.

30. According to the Respondent No. 5, construction of concrete gravity dams all over the world is common and the same technology has also been adopted for the SLHEP dam. The seismic aspect of the technical design in India was at par with the international state of the art and practices which have been upgraded with improvement in technology. The project underwent rigorous site specific study on various aspects like the seismological instrumentation of the area, detailed investigation of local geotechnical conditions, geological investigations on the presence of active faults, ongoing tectonic activities in the neighbourhood, etc. These were carried out by specialised institutes like, Deptt. of Earthquake Engineering, Roorkee, and Central Water and Power Research Station, Pune. Dams in India are designed and built to be earthquake resistant and require mandatory approval of the National Committee on Seismic Design Parameters for Dams

(NCSDP). It is only after such approval that projects are designed by taking into account the approved seismic parameters by the NCSDP. Dynamic analysis is performed on the dam section to study the behaviour of the dam after a real time simulation of earthquake to predict the stresses in various locations and identify the hot spots within the dam section and provide various remedial measures. That there has been no violation of the Forest (Conservation) Act, 1980, EIA Notification, 1986 in respect of the project. It is submitted that the Hon'ble Supreme Court permitted the NHPC Ltd. to execute the SLHEP by order dated 19.4.2004 subject to certain conditions. It is further stated that the Majuli river island in respect of which apprehension has been expressed by the Applicant is situated about 120 Km away from the dam and that the Kaziranga Sanctuary is located parallel to NH 37 on the south bank of Brahmaputra much downstream of Majuli Island. As the discharge contribution of river Subansiri is only 10% to the mainstream Brahmaputra, the reservoir of the dam during the monsoon season will be kept at low level at elevation of 190 m reducing its capacity and resulting in corresponding lower capacity inflow ratio thereby trapping less sediment and limiting sedimentation in the reservoir in the long run. Maintaining lower level of reservoir during monsoon will facilitate reducing settlement of sediment in the river keeping the regime of the reservoir sediment concentrate up and downstream the same. It is, therefore, stated that the apprehension of threat to the island from the deposit of flushed sand and to the Kaziranga sanctuary due to cataclysmic hydrological surge from Subansiri river in the mainstream Brahmaputra were unfounded.

31. The allegation of the Ranganadi river having completely dried up downstream of the dam due to diversion of discharge to Dikrong was also denied.

32. In their affidavit, the Respondent no.3 has taken the same stand as the Respondent 5 both on the question maintainability of the application as well as on the merits and, therefore, in order to avoid prolixity, we need not delay ourselves much on those except to briefly observe on some of the salient aspects on the merits as would follow hereafter.

33. It is stated that under the initiative of the Prime Minister of India in a conference with the Chief Ministers of North Eastern States, a planned development agenda for NE Region was drawn up as this part of the country is known to be backward. As part of this initiative "a Hydro Electric Project" was considered as the prime requirement for development and employment generation in the area. Accordingly, Subansiri Lower Hydro Electric Project (SLHEP) was planned and, after thorough research and survey site clearance for the project was granted by the MoEF in 2001. Subsequently, several cases were filed before the Hon'ble Supreme Court but ultimately the project was cleared by the Hon'ble Supreme Court. At the initial stage, Brahmaputra Board (BB) was entrusted with the work of construction of the dam but was later handed over to the NHPC. Subsequent thereto further survey was conducted, technical reports obtained and ultimately final clearance accorded by the MoEF, Central Water Commission, Central Electricity Authority, etc.

34. On the issue raised by the Applicant regarding protection of fish species, it is stated that a detailed study on migration of fishes and its species and on their preservation were carried out by Central Inland Fisheries Research Institute (CIFRI) Barrackpore, a Govt. of India Institute. As per their report, 55 species of fishes were noticed in the Subansiri River for the protection and preservation of which construction of a full-fledged fish hatchery in the downstream area of the dam was suggested. Regarding presence of dolphins, it is stated that according to an IUCN study, dolphins habitats have been reported about the 20 kms reach downstream from Subansiri Lower Project Dam onward up to the last 45 kms stretch before the confluence of the Subansiri and the main Brahmaputra rivers whereas the project is located at a distance of 110 kms away from the confluence. So far as the UGC report project relied on by the applicant is concerned, it is stated that the report is not a published one and that the study carried out by the CIFRI is more reliable.

35. The seismic design parameter recommended by the Expert Group (EG) which had conducted downstream impact study, had already been followed and thereafter no further revision was suggested.

36. The Respondent No. 5 sought to explain the technical aspects as follows:

- (i) Technical Expert Committee (TEC) is also of the view that the sluice spillway, as provided in Subansiri Lower Project (SLHEP), is in accordance with best international practice and codal provisions in respect of dams on rivers with heavy sediment load. The sediment management methodology of Subansiri

Lower Project shall maintain the river regime close to its original natural condition.

- (ii) Any automatic release of water without any control is not technically feasible either through diversion tunnels or from opening in the dam due to varying elevation of water in the reservoir.
- (iii) Earlier also, the petitioner was informed regarding non-feasibility of discharging 450 cumec through diversion tunnels and opening citing technical difficulties.
- (iv) No diversion tunnels of 9.5m diameter with lengths varying from 500m to 650m are operating for temporary diversion of the River Subansiri. The combined design discharging capacity of these diversion tunnels is 4550 cumec and during monsoon up to 4550 cumec is discharged through these 5 diversion tunnels constructed for temporary diversion of river to facilitate construction of the main dam in the River.
- (v) As the spillway crest level shall be at E1.145m, silt is likely to get deposited up to crest level making these tunnels unserviceable during operation state of the project as the bottom level of these diversion tunnels is at E1.100m/102m. Operating these tunnels in high head conditions (i.e. with reservoir E1 at 205m) will damage its concrete lining due to high velocity and cavitations problems which may subsequently affect the dam stability on the left bank dam blocks.
- (vi) Nine sluice spillway openings have been envisaged with radial gates for building up the reservoir for power generation and regulating the flood discharge during monsoon. Excess water during monsoon shall be released safely in the downstream area by varying the opening heights of the radial gates according to flood discharge and design discharge for power generation. There are 9 no. opening of size 11.5 m (W) x 14 m (H) having crest level at E1.145 m. The HRT intake invert is kept at E1.160 m. Water from the reservoir shall be diverted to Power house through head race tunnels for power generation. In any case,

the reservoir water level cannot be brought lower than the Minimum draw down level i.e. E1.181 m for power generation. Also, reservoir shall be operated according to reservoir rule curve provided in DPR approved by Central Water Commission (CWC).

- (vii) Regarding release of 450 cumec, it is stated that considering hypothetically & theoretically, if the proposed under pass without any regulating gate is assumed at E1.145m as suggested by the petitioner, it shall be under minimum water head of 36m during MDDL and under maximum water head of 60m during FRL during lean season and, the entire reservoir with its live capacity shall be emptied in few days during the lean season if a 5.75 m diameter underpass without regulating gates is incorporated as suggested by the Applicant provide that the reservoir gets filled up in the first place. Even otherwise, it shall not be possible to get the reservoir filled up to MDDL in the lean season resulting in there being no reservoir head and power generation. The purpose of the project thus shall be defeated and it will not be possible to use this project as peaking power station and generate designed annual energy.
- (viii) Automatic underpass suggested by the petitioner without any gates cannot be designed and incorporated in the dam. Hence, petitioner's proposal of providing underpass at the level of the spillway opening is not technically feasible.
- (ix) The petitioner's apprehension of there being disconnection of the river from the dam up to the tail race release point i.e. 500 m downstream of the dam, is unfounded. The normal tail water level shall vary between EL. 104.5m to 109.50m depending on the running of number of turbines which shall be built up till the dam toe due to back water and the river bed profile being almost flat in the stretch between dam toe and tailrace release point making certain depth of water always available and, no portion of the river will run dry.

- (x) Keeping in view the concerns of the people in the downstream, NHPC has agreed to run one turbine continuously for 24 hrs as suggested by Expert Group in order to release about 250 cumec of water in the downstream of the powerhouse.
- (xi) As regards the recommendation of Expert Group for creation of additional storage in the downstream of the dam, it is stated that the Expert Group had proposed for adoption of both structural and non-structural measures to regulate discharge variation. The option of introducing small capacity pond/s for the dam as a structural means was not found suitable even by the Expert Group due to likely siltation of the small reservoirs and its capacity getting reduced to negligible volume in course of time. The Expert Group had also suggested non-structural measure of running one machine continuously.
- (xii) A Joint steering Committee (JSC) was constituted by NHPC as desired by Govt. of Assam & MOP, GOI comprising of members from Water Resource Deptt. Govt. of Assam, Water Resource Deptt. Govt. of Arunachal Pradesh, Brahmaputra Board, Central Water Commission, IIT Roorkee & NHPC, to address the recommendations of Expert Group of Assam on the downstream issues related to the project. The JSC recommended release of about 250 cumec in the lean season by operation of one turbine continuously which was agreed to by the NHPC thereby obviating the necessity of a regulating pond d/s for the dam.
- (xiii) Central Electricity Authority (CEA) also concurred with the recommendation of one machine being run continuously to release about 250 cumec in the lean season after it was satisfied that the studies were in order.
- (xiv) The Project shall not release flushed sediment. In the Subansiri reservoir, sediment management shall be ensured by venting/slucing keeping the reservoir at lower level in most of the monsoon months by which method most of the sediment is passed on as and when received from the upstream on to

downstream. In other words, the river regime is always maintained close to its original natural condition.

37. The Applicant has filed separate rejoinders against each of the counter affidavits of the Respondents controverting the stand taken by them and reiterating his contentions raised in the OA and the MAs filed by him during the course of the proceedings.

38. It is relevant to note that among the MAs, MA No. 1088 was preferred seeking for stay on the further constructions on the dam and for direction upon the NHPC to incorporate an underpass/opening in the dam for automatic release of the sustenance flow of water and, MA No.6 for stay on the construction of the project until the issues raised by the Thattee Committee (TEC) and the Applicant had been addressed. On 20<sup>th</sup> January, 2015 when these MAs were moved, it was informed by Mr. Kushagra Shah, Learned Counsel for the Respondents No. 1, 6 and 7, i.e., the Ministry of Power (MoP), Ministry of Water Resources (MoWR) and the Brahmaputra Board (BB) respectively, that the work on the project had been kept pending and not resumed due to public agitations and that by OM dated 13.01.2015, the Ministry of Power, Government of India (MoP), had constituted a "Project Oversight Committee" (POC) comprising of eight members to examine the various issues in respect of the project and to recommend measures for its resolution. Taking note of the OM the Tribunal, vide order dated 20.01.2015 observed as follows:

"Heard Id. Counsel Mr. Sanjay Upadhyay appearing on behalf of applicant and other respondents present today. The Respondents No. 1, 3, 4 and 7 are directed to file their Vakalatnama before the next date of hearing, failing which their appearance will not be marked on the next date.

During hearing Mr. Sanjay Upadhyay, Id. Counsel has produced a copy of the counter affidavit filed by respondent No. 2 viz. Ministry of Environment & Forest and

Climate Change before the Hon'ble Supreme Court in connection with IA No.6/13 arising out of Civil Appeal No. 6736/13 in the case of **Alaknanda Hydro Power Co. Ltd. .etc. appellant Vs. Anuj Joshi and Ors. etc. . ....respondents.** He prays

that MoEF be directed to file as affidavit annexing the copy of the said counter affidavit as was filed by the MoEF before the Apex Court with reference to the case Alaknanda (supra) which will be helpful for proper adjudication with regard to the construction of Hydro Electric Project therein. The MoEF is directed to file an affidavit annexing that document as referred to within four weeks from this day failing which the applicant would be at liberty to file a supplementary affidavit with reference to Original application annexing the given affidavit as has been produced today before us.

Ld. Counsel appearing for respondent Nos. 1, 6 and 7 submits that the work of the Hydro Electric Project relating to Lower Subansiri Project was kept pending in view of the agitation of the inhabitants of the locality concerned and the project has not yet been resumed. It is further contended by Ld. Counsel that vide office memorandum dated 13.01.15 the Govt. of India, Ministry of Power has constituted Project Oversight Committee to provide guidance/oversight to examine and resolve the various issues of the said Lower Subansiri Project and also to oversee their compliance along with project implementation. The document to that effect has been annexed. It appears from the said memorandum that as many as eight (8) members are included in that Oversight Committee and the Terms of Reference of such Project Oversight Committee are as follows:-

“(i) Review of safety aspect of the Dam in line with the recommendations made by Expert Group and Technical Expert Committee.

(ii) Downstream impact review as recommended by Expert Group of Assam and Technical Expert Committee constituted by the Planning Commission.

Xxx                      xxx                      xxx                      xxx                      xxxx

(iv) The POC shall finalize its report within a period of three months from the date of notification. “

Having regard to such, we are recording the submission of Ld. Counsel appearing for respondent nos. 1, 6 and 7 that work has yet not resumed and as such, the question of injunction application restraining them to proceed with the work will be considered on the next date of hearing. All the parties are at liberty to submit their respective reply on the issue with regard to counter affidavit filed by Respondent No. 1 before the Apex Court, constitution of Oversight Committee and its terms of reference as well as the MAs. “

39. On 11<sup>th</sup> December, 2015, Mr. K.P. Pathak, Learned Senior Counsel for the Respondent No.3, NHPC, relying upon the report of the Advocate Commissioner appointed earlier, sought for an order permitting the Respondent to take up repair and maintenance work that were not related to the main project for the safety and protection of the people of the locality. The prayer was allowed to the limited extent as prayed for vide order dated 11.12.2015, relevant portion of which is reproduced below: -

“Heard Id. Counsel appearing for the applicant and the respondents present today.

Ld. Counsel appearing for the applicant prays for adjournment for a week. Having regard to the submissions made by Ld. Counsel appearing for the project proponent and MoEF and the report of the Advocate’s Commissioner highlighting the work as identified in paragraph 12 of the report appropriate order to be passed for safety of the people of the locality and the workers who are working in the project. It is submitted by Id. Counsel appearing for the Respondent No.3 that emergency maintenance work is required for safety of the people of the locality which is not related to the main project. Hence direction may be given to the project proponent to perform the repairing job. Ld. Counsel appearing for the MoEF has also supported the submission. Having regard to the contention made and considering the report of the Advocate’s Commissioner, we are of the view that the Respondent No.3 should be allowed to complete the repairing and maintenance work on emergent basis in terms of the report relating to the job as identified in paragraph 12 which reads as such:-

“12.

- (i) Removal of the stone chips required for construction from the bank of the river as during the monsoon it may impede the flow of the river.
- (ii) As in most of the tunnels where concrete lining are not completed and only shotcreting is complete, concrete lining needs to be completed for protection of the tunnel as there remains a possibility that the tunnels may collapse.
- (iii) That the road network in the project is in a very bad condition and needs to be repaired.
- (iv) That most of the equipment lying in a desolate state outside under open sky must be properly maintained as during the monsoon or even in summer due to heat they may not function properly.”

It is made clear that no construction work to the project to be done.

Besides the aforesaid work, the Respondent No.3 viz. project proponent is entitled to undertake emergency maintenance work for safety and protection of the public and the property.”

40. This order was reiterated in the order of the Tribunal dated 5<sup>th</sup> April, 2016 directing the Respondent No. 3 not to undertake any work on the main project except those that were related to urgent repairs and maintenance.

41. MA No. 5 had been filed by the Applicant ostensibly seeking to place on record additional documents. By order dated August 6, 2014, the MA was allowed so far as it related to receiving of additional documents. However, this MA assumes some significance in view of the later developments, particularly in view of MA No. 6 that was filed later by the Applicant to which we have adverted to earlier notwithstanding the objections of the Respondents against the other questions raised therein.

42. We have heard the learned counsel for the parties including Mr. S.D. Sanjay, Ld. Addl. Solicitor General, who appeared for the Govt. of India, at the last leg of the arguments.

43. Before we deal with the merits of the case, we may consider the preliminary objections raised on behalf of the respondents No. 3 and 5. Which were broadly on the *locus standi* of the applicant to file the application on two grounds, i.e., (i) that he did not fall within purview of Sec. 18 in the light of Section 14 of the NGT Act and, (ii) that the application was barred by limitation as, when the cause of action, if any, had arisen in the year 2003 when the EC for the Hydro Electric Project was granted by the MOEF, the OA was filed only in the year 2013 without the delay being explained.

44. We need not enter into the details of the arguments advanced by the parties as these questions are more *res Integra* in view of the judgement of a

larger Bench of the Principal Bench of the Tribunal presided over by the Hon'ble Chairperson dated 10.12.2015 in **OA 61 of 1012** in the matter of **Dr. Arvind Gupta –vs- UOI & Ors** and a batch of other OAs in which identical issues were involved. The following portion of the decision will be relevant :-

“Whether the applicant has *locus standi* to file the present application.

a. Whether the present application is barred by limitation.

8. For the purpose of discussion, we will take up the first 2 issues together. It is not the submission of all respondents that the applicant does not have a locus standi to file the present application. Section 14 of the NGT Act gives jurisdiction to the Tribunal over all civil cases, where a substantial question relating to the environment, more importantly, including enforcement of any legal right relating to environment is involved. Such question should arise out of the implementation of the enactments specified under Schedule I. Section 14 does not define or states as to who can be an applicant. It is only sub section 3 and proviso thereto that uses the word applicant. This is not in contra distinction to the functioning of Section 16 of the NGT Act, where any person aggrieved has to file appeal as contemplated. Section 18 then provides for the application under Section 14 and 16 has to contain the particulars as accompanied by such facts as prescribed. As prescribed in terms of Section 18 (2) without approach to the provisions contained under Section 16, an application for grant of relevant compensation or settlement of dispute to be made to the Tribunal by the person who is aggrieved, who has sustained injury, whose property has been damaged, legal representative of a deceased and the Government as stated. Under Rule 2(c) of the NGT (Practice and Procedure) Rules, 2011 provides that any person who files the application before the Tribunal would be an applicant. Section 14 has intentionally been worded by the legislature to cover all cases which falls under any of the specific category i.e. where substantial question relating to environment arises or where enforcement of any legal right relating to environment arises. In these circumstances, if the case falls under either of these categories then the locus of the applicant can hardly be questioned. Furthermore, the object of the NGT Act is to make environmental justice easily accessible and for expeditious disposal of environmental cases. According to the applicant, he has a legal right arising under Article 21 of the Constitution of India, so as to ensure that he receives

a decent and clean environment and any activity which is affecting them or is a threat to environment and public health would be actionable under the NGT Act. Whether the applicant would succeed on merit or fail, even on some issues preliminary or otherwise, would be a different matter. But the applicant cannot be denied the consideration of the application at the threshold on the ground of locus standi. The applicant may not have suffered a personal injury thus he may not personally aggrieved. Still he will have a right to approach the tribunal for a precautionary relief. If the matters are covered under any of the Scheduled Acts, the applicant has a right to invoke the jurisdiction of the Tribunal and make appropriate prayers.

9. The main consideration before the Tribunal would be a substantial question relating to environment or any issue arising from implementation of the Scheduled Acts. A person can approach the Tribunal even when he claims enforcement of a legal right in relation to environment.

We may refer to the judgment of the Tribunal in the case of *Goa Foundation v. Union of India*, 2013, All India (NGT) Reporter (New Delhi) 234 where on the question of locus standi, the Tribunal held as under:

25. The very significant expression that has been used by the legislature in Section 18 is 'any person aggrieved'. Such a person has a right to appeal to the Tribunal against any order, decision or direction issued by the authority concerned. 'Aggrieved person' in common parlance would be a person who has a legal right or a legal cause of action and is affected by such order, decision or direction. The word 'aggrieved person' thus cannot be confined within the bounds of a rigid formula. Its scope and meaning depends upon diverse facts and circumstances of each case, nature and extent of the applicant's interest and the nature and extent of prejudice or injury suffered by him. P. Ramanatha Aiyar's *The Law Lexicon* supra describes this expression as 'when a person is given a right to raise a contest in a certain manner and his contention is negative, he is a person aggrieved' [*Ebrahim Aboodbakar v. Custodian General of Evacue Property* [AIR 1952 SC 319]. It also explains this expression as 'a person who has got a legal grievance i.e. a person wrongfully deprived of anything to which he is legally entitled to and not merely a person who has suffered some sort of disappointment'.

41. The implication of jurisdiction is, of course, not at the discretion of the judge but is relatable to the legislative intent and may be expanded within the framework of the statute. Once the legislature has intended to include 'all civil cases' in contradistinction to criminal cases, then it is not desirable for the Tribunal to carve out another class

of cases which are to be excluded from the jurisdiction of the Tribunal. This will amount to adding words to a statute which are not provided otherwise. In a civil case which raises a question relating to environment, the Tribunal shall have jurisdiction to decide disputes arising out of such a question. Therefore, there is no need to carve out any exception for exclusion which is not spelt out by the legislature itself.

42. Under the scheme of the Act, an anticipated action will also fall within the ambit of the jurisdiction of the Tribunal. Section 20 of the NGT Act provides that, while deciding cases before it, the Tribunal shall take into consideration the three principles -- principle of sustainable development, precautionary principle and the polluter pays principle. The precautionary principle would operate where actual injury has not occurred as on the date of institution of an application. In other words, an anticipated or likely injury to environment can be a sufficient cause of action, partially or wholly, for invoking the jurisdiction of the Tribunal in terms of Sub-sections (1) and (2) of Section 14 of the NGT Act. The language of Section 20 is referable to the jurisdiction of the Tribunal in terms of Sections 14 and 15 of the Act. The precautionary principle is permissible and is opposed to actual injury or damage. On the cogent reading of Section 14 with Section 2(m) and Section 20 of the NGT Act, likely damage to environment would be covered under the precautionary principle, and therefore, provide jurisdiction to the Tribunal to entertain such a question. The applicability of precautionary principle is a statutory command to the Tribunal while deciding or settling disputes arising out of substantial questions relating to environment. Thus, any violation or even an apprehended violation of this principle would be actionable by any person before the Tribunal. Inaction in the facts and circumstances of a given case could itself be a violation of the precautionary principle, and therefore, bring it within the ambit of jurisdiction of the Tribunal, as defined under the NGT Act. By inaction, naturally, there will be violation of the precautionary principle and therefore, the Tribunal will have jurisdiction to entertain all civil cases raising such questions of environment. Such approach is further substantiated by the fact that Section 2(c), while defining environment, covers everything. Section 2(m) brings into play a direct violation of a specific statutory environmental obligation as contemplated under Section 5 of the Environment Act as being substantial question relating to environment. These provisions, read with Section 3(1) and Section 5 of the Environment Act, which place statutory obligation and require the Government to issue appropriate directions to

prevent and control pollution, clearly show that the legislature intended to provide wide jurisdiction to the Tribunal to deal with and cover all civil cases relating to environment, as stated by the Supreme Court in the case of S.A.L. Narayan Row & Anr. v.

43. Ishwarlal Bhagwandas & Anr. [AIR 1965 SC 1818). The character of the proceedings is normally not with reference to the relief that the Tribunal can grant but upon the nature of the right violated and the appropriate relief which can be claimed.

**(underlining supplied)**

10. In view of the above stated principle, facts and circumstance of the present case, we are of the view that the applicant has the locus standi to file the present application.

11. Coming to the second limb of the contention that the application is barred by time. We are again of the stated view that the application is not barred by limitation in terms of the Section 14 of the NGT Act. In the connected matters the applicants are personally aggrieved by conversion of the Green Belt, Public Park and district parks for erection and construction of mobile towers etc. which according to them is a violation of Master Plan, which itself would be part and parcel of environment and ecology which these authorities have a right to protect. It is true that the application has to be filed within a period of 6 months from the date when the Cause of Action first arose. The Tribunal is vested with the power to condone the delay in terms of proviso to Section 14 if the application is filed beyond 6 months. This power can be exercised for condoning the delay but under and not in excess of 60 days. The term 'cause of action' has been used in contra distinction to continuing cause of action. In case of a continuing cause of action, 'cause of action first arose' has completely a distinct and different role while computing period of limitation. However, it is not equally applicable and does not have the same consequences in a case where the cause of action is recurring complete cause of action. In other words, whenever subsequent act or subsequent breach is a complete cause in itself and its consequences are different, then such cause of action would enable an applicant to bring action before the Tribunal on the

strength of the subsequent act. The limitation would be computed from the date of the subsequent breach or act. In this regard, we may refer to the judgment of the Tribunal in the case of *The Forward Foundation V. State of Karnataka*, 2015 ALL (I) NGT Reporter (2) (DELHI) 81 where the similar question of adherence arose. After hearing the law in detail the Tribunal held as under:

23. 'Cause of Action' as understood in legal parlance is a bundle of essential facts, which it is necessary for the plaintiff to prove before he can succeed. It is the foundation of a suit or an action. 'Cause of Action' is stated to be entire set of facts that give rise to an enforceable claim; the phrase comprises every fact, which, if traversed, the plaintiff must prove in order to obtain judgment. In other words, it is a bundle of facts which when taken with the law applicable to them gives the plaintiff, the right to relief against defendants. It must contain facts or acts done by the defendants to prove 'cause of action'. While construing or understanding the cause of action, it must be kept in mind that the pleadings must be read as a whole to ascertain its true import. It is not permissible to cull out a sentence or passage and to read it out of the context, in isolation. Although, it is the substance and not merely the form that has to be looked into, the pleading has to be construed as it stands without addition or subtraction of words, or change of its apparent grammatical sense. The intention of the party concerned is to be gathered, from the pleading taken as a whole. [Ref. *Shri Udhav Singh v. Madhav Rao Scindia*, (1977) 1 SCC 511, *A.B.C Laminart Pvt. Ltd. v. A.P. Agencies*, [AIR 1989 SC 1239].

27. Whenever a wrong or offence is committed and ingredients are satisfied and repeated, it evidently would be a case of 'continuing wrong or offence'. For instance, using the factory without registration and licence was an offence committed every time the

premises were used as a factory. The Hon'ble Supreme Court in the case of Maya Rani Punj v. Commissioner of Income Tax, Delhi, (1986) 1 SCC 445, was considering, if not filing return within prescribed time and without reasonable cause, was a continuing wrong or not, the Court held that continued default is obviously on the footing that non-compliance with the obligation of making a return is an infraction as long as the default continued. The penalty is imposable as long as the default continues and as long as the assessee does not comply with the requirements of law he continues to be guilty of the infraction and exposes himself to the penalty provided by law. Hon'ble High Court of Delhi in the case of Mahavir Spinning Mills Ltd. v. Hb Leasing And Finances Co. Ltd., 199 (2013) DLT 227, while explaining Section 22 of the Limitation Act took the view that in the case of a continuing breach, or of a continuing tort, a fresh period of limitation begins to run at every moment of time during which the breach or the tort, as the case may be, continues. Therefore, continuing the breach, act or wrong would culminate into the 'continuing cause of action' once all the ingredients are satisfied. Continuing cause of action thus, becomes relevant for even the determination of period of limitation with reference to the facts and circumstances of a given case. The very essence of continuous cause of action is continuing source of injury which renders the doer of the act responsible and liable for consequence in law.

12. The applicant has only prayed for the implementation of the Office Memorandum dated 9<sup>th</sup> August, 2012. The application was filed on 12<sup>th</sup> November, 2012 before the Tribunal well within the period of 6 months. Consequently the violation claimed by the applicant in this application relates to lack of regulatory regime, statutory or otherwise and

violation of the prescribed guidelines while constructing/erecting towers every day. Construction of every new tower in a different colony in a different place public park, district centre or Green area would be an independent cause of action. In other connected matters, the cause of action is very recent, for instance where the towers are under construction and application have been brought before the Tribunal. These are the cases which will consequently fall within the prescribed period of limitation but as each illegal construction would be an independent cause of action in itself and the period of limitation would have to be counted therefrom. Thus these applications are not barred by time. We may refer to the Judgment of the Tribunal in the case of Forward Foundation (Supra).”

**(Underlining supplied)**

45. That apart, under Art. 48A of the Constitution of India, it is the bounden duty and obligation of every citizen to protect the environment and, therefore, any citizen has the right and under Article 51A (g), the responsibility to raise an issue where substantial question relating to environment is involved. The applicant having raised such an issue, in our view, has the necessary *locus* to file this OA.

46. So far as limitation is concerned, we find that the applicant had filed a writ petition being WP (Civil) 359 of 2012 under Art. 32 of the Constitution before the Hon’ble Supreme Court which was subsequently withdrawn on 9.9.2013 but had filed the present OA on the same date before this Tribunal. Thus as the applicant had been pursuing the matter before the Hon’ble Supreme Court and had been diligent in filing OA in the Tribunal the very day

it was withdrawn from there , it cannot be said that the application is barred by limitation.

47. Apart from the above, there are other substantial factors that would repel the objection. Although the work on the project is said to have begun from the year 2005, even as of now it is at a stand-still due to serious public protests against it which again admittedly began from the year 2008. The agitation gave way to the Government of Assam constituting an Expert Group comprising of Professors of Guwahati University, Dibrugarh University and I.I.T., Guwahati, to look into the downstream impact of the project on the ecology on the Assam side. During the period between 2005 and 2011, a PIL being PIL No. 83 of 2009, was pending before a Division Bench of the Gauhati High Court assailing the downstream impact study of the project as having not been appropriately carried out before grant of clearance. Although the PIL was dismissed on 07.01.2010, the matter did not end there.

48. The Expert Group (EG) appointed by the Government of Assam submitted its preliminary report in February, 2009 followed by a draft report in June, 2010 and the final report in March, 2011. As per the Expert Group recommendations, the NHPC agreed to run one turbine continuously and discharge 320 cumec of water as sustenance flow. It is relevant to take note of the fact that the EAC had stipulated discharge of 6 cumec during the lean season which was one of the recommendations based upon which EC was granted for the project by the MOEF & CC. Since the EG, in Part I of its report, had raised various questions on the construction of the dam and in Part II, on issues relating to environmental and socio-economic aspects, the Planning Commission of India constituted a Technical Expert Committee (TEC) called

the Thatte Committee comprising of Dr. C.D. Thatte and Dr. M.S. Reddy, former Secretaries, Ministry of Water Resources, Government of India, to examine the report of the EG/ Committee. The Thatte Committee or the Technical Expert Committee (TEC) submitted its report in July, 2012 whereby after deliberating in detail on the various aspects, made certain recommendations. This again led to the constitution of yet another committee in July, 2012 called the Joint Steering Committee (JSC) comprising of experts from the Central Water Commission (CWC), Water Resources Department of the Governments of Assam and Arunachal Pradesh, Brahmaputra Board, IIT (Roorkee) and NHPC. The report submitted by the JSC was once again subjected to further examination by a Project Oversight Committee (POC) set up in July, 2015 that comprised of the original Expert Group of Assam (EG), Central Electricity Authority (CEA), CWC, Geological Survey of India (GSI) and IIT (Roorkee). The Expert Group of Assam (EG) submitted a separate report in January, 2016 and by the rest of the members in February, 2016. The final POC report was filed before the Tribunal by Mr. Kushagra Shah, Learned Counsel for the Respondents No. 1 (MoP), 2 (MoWR) and 7 (Brahmaputra Board) on 5<sup>th</sup> April, 2016.

49. In the interregnum, study on the Cumulative Impact and Carrying Capacity of Subansiri Basin including Downstream Impact study was being carried out by the CWC and was completed in the year 2015. Based on the recommendations of the CWC after completion of the studies, the MOEF & CC by letters dated 27.04.2016 and 27.06.2016 finally recommended that one unit of the turbines of the project should run continuously to ensure discharge of 240 cumec as sustenance flow. Apart from these, there were

also other substantial alterations made in the project and the possibility of there being more changes appear to be quite certain as studies of some aspects are still being carried out. For instance, the width of the dam base has been increased and the environment flow of 6 cumec initially recommended by the EAC has since been revised to 250-300 cumec. Thus the EC granted in the year 2003 obviously appears to have been undergoing changes from time to time on the recommendations of the Committees constituted at different times regarding which we have already adverted to above.

50. It is eminently manifest from the facts and circumstances set out above that the Project was undergoing examination on multiple aspects of which, alteration in the dam base and release of sustenance flow or eflow were only two of the many, just before and during the pendency of the present case. Thus, even factually, we find it difficult to accept the contention that the Application is barred by the law limitation as asserted on behalf of the Respondents

51. At this stage, we may also consider the further contention of Mr. A.D.N.Rao, Id. advocate for the respondent No. 5, State of Arunachal Pradesh, that the application is barred by the principle of *res judicata*. It is urged that the NHPC had had been allowed to start the project by the Hon'ble Supreme Court vide order dated 19.4.2004 in **IA No. 966 of 2003** filed by one **Dr. Lalit Mohan Nath, in writ petition (C) No. 202 of 1995**. Therefore, according to the Learned Counsel, any attempt to stall the project by any proceedings instituted subsequent to the said order before this Tribunal would be hit by the principle of *res judicata* and also that it is

impermissible for the Tribunal to reopen the matter when admittedly the Applicant has not challenged the project itself nor the EC granted by MOEF way back in 2003. It is submitted that what cannot be done directly cannot be permitted to be done indirectly which, according to him, is what the Applicant is attempting to do in the present proceedings. In support of this contention reliance has been placed on the decisions of the Hon'ble Supreme Court in the case of ***M.C.Mehta-vs- Kamal Nath & Ors***, (2000) 6 SCC 213, ***Dr. Subramanian Swamy –v-State of Tamil Nadu & Ors*** (2014)5 SCC 76, ***State of Karnataka –vs- All India Manufacturers Organisation & Ors***, (2006) 4 SCC 683, ***Mangi Ram & Ors –vs- UOI & Ors*** and decisions of the Himachal Pradesh High Court in writ petitions No. 9980 and 2083 of 2012 and 68/2013 (***Karam Chand & Anr –vs- Union of India & Ors***).

52. While dealing with the contentions of Mr. Rao, we may for convenience, first reproduce below the directions of the Hon'ble Supreme Court referred to by him, i.e., order dated 19.4.2004 in ***IA No. 966*** in ***writ petition WP(C) No. 202 of 1995: T.N.Godavarman Thirumalpad –vs- UOI & Ors( 2006)1 SCC 1***:-

“Parties are agreed that the project proposed by the National Hydroelectric Power Corporation Ltd. may be permitted by the MoEF subject to fulfilling the following conditions:-

(i) The legal status of the sanctuary land i.e. 42 ha. will remain unchanged and will continue to be a part of the Sanctuary.

(ii) The Reserve Forest area that forms part of the catchment of the Lower Subansri including the reservoir should be declared as a National Park/Sanctuary. NHPC will provide funds for the survey and demarcation of the same.

(iii)The extent of area to be declared as National Park/Sanctuary will be decided by the State Government in consultation with the Ministry of

Environment and Forest and associating reputed Forestry and Wildlife Experts.

(iv) The National Park/Sanctuary will be under the control of the Chief Wild Life Warden, Government of Arunachal Pradesh, to be managed by an officer of the rank of the Deputy Conservator of Forests and above.

(v) The National Hydroelectric Power Corporation (NHPC) will provide funds for the relocation and re-settlement of the people, if any, residing inside the proposed National Park/Sanctuary at (ii) above, at sites outside the protected area on land earmarked for the purpose by the State Government in advance.

(vi) NHPC will make adequate arrangements for supply of fuel to the staff and workers engaged in the construction. Under no circumstances, fuelwood will be removed from the sanctuary or forest area.

(vii) There would be no construction of dam upstream of the Subansiri river in future.

(viii) The State Government will provide dedicated field staff for the management and protection of the National Park/Sanctuary, which will include adequate number of ACFs, RFOs, Foresters, Guards and Watchmen etc. Requisite infrastructure, communication, equipments and other facilities will be provided to the staff and the officials. The entire cost i.e. recurring and non-recurring expenditure will be borne by NHPC for a period of ten years. The State Government will prepare and approve the management Plan for the National Park/Sanctuary for a period of ten years and submit to the NHPC for funding support.

(ix) The NHPC will also ensure that there is no siltation down the Subansiri river during the construction phase. The spillage and diversion channels will be maintained as fish ladder.

(x) Under no circumstances, the excavated material will be dumped either in the river or any other part of the National Park/Sanctuary or the surrounding forests.

NHPC will also provide complete funds for reforestation of the degraded sites with indigenous species no siltation down the Subansiri River during construction phase.

In this view of the matter, the IAs stand disposed of.”

**(Bold for emphasis)**

53. A bare reading of the above would undeniably reveal that in the IA, the Apex Court, had confined its directions only on the prayer for compliance of the order dated 14.2.2000 passed in *WWF-I -vs- UOI* in respect of

preservation of National Parks and Sanctuaries and prevention of diversion of forest land for non-forest purpose *dehors* the other aspects.

54. Thus quite apparently the facts and circumstances in the IA that led the Hon'ble Supreme Court to pass the order is clearly distinguishable from this OA and, therefore, it cannot be said that the matter had already been finally adjudicated upon and settled by the Hon'ble Supreme Court. We, therefore, have no hesitation in rejecting the objection and hold that the OA is not hit by the principle of *res judicata*.

55. The other decisions cited by Mr. Rao re-emphasises the well settled principles of *re judicata* but, as already held, in the facts and circumstances, those would have no application in the present case.

56. Having held as above on the preliminary objections, we may now deal with the other questions on the case in its merits which shall follow hereafter.

57. At the outset, it may be observed that in the original Application, the Applicant has not challenged the construction of the Hydro Electric Project or the dam or the EC granted by the MOEF *per se* but has expressed his anxiety with regard to the safety and design of the dam, its downstream effects on the ecology, the lives of the riparian tribal people residing in the downstream areas for generations and destruction of the Gangetic Dolphins which is a declared as a National Aquatic Animal and their possible extinction. We may deal with each of the questions and the rival contentions of the parties on those in seriatim as shall follow.

58. **Location of the Dam and its seismicity** : Mr. Sanjay Upadhyay, Ld. Advocate for the Applicant, would submit that in MA 5 of 2014, the applicant has placed on record the crucial report dated 24.7.2012 submitted by the Technical Expert Committee (TEC) comprising of Dr. C.D. Thattee and Dr. M.S.Reddy constituted by the Planning Commission to study various aspects in view of the difference of opinion amongst the expert bodies engaged by different authorities, more particularly, the State of Assam. In the report, the TEC had suggested changes in the design/dam structure if found inadequate. It had also suggested flood management and spillway arrangement. According to the Learned Counsel, structural deficiency of the dam was not addressed by the Respondents. That as per the report of Central Water Commission (CWC), the foundation of the dam is very low and the foundation rock may lose its strength on saturation which raises concern on the stability of the dam. It is submitted that the TEC has observed that seismic coefficient for the earthquakes were uncertain and unpredictable and it was necessary to have a better study on the behaviour of the dam under peak ground acceleration. It is further pointed out that the dam break analysis was not done properly and that the TEC had only recommended non-structural proofing and setting up of a Dam Design Review Panel.

59. Strongly refuting all allegations, it was submitted by Mr. K.P.Pathak, Learned Senior Advocate for the Respondent No. 3 (NHPC), that all necessary steps have been taken for site location, seismic protection and technological stability of the dam as recommended by expert groups consisting of various eminent technologists/scientists from IITs, Universities and also taking into account the opinion of experts from various Govt. authorities. It is submitted

that thus far there has been no problem in any of the dams amongst many constructed by the NHPC in the country rendering the apprehension of the Applicant baseless and without any foundation. He has referred to the various studies conducted on seismic condition of the location. It will be relevant to reproduce below the submission on behalf of the respondent No. 3 on this aspect :

“ Seismological aspects for PGA has been studied extensively by reputed institutes like IIT Guwahati, IIT Mumbai, IIT Roorkee, Geological Survey of India and Central University of Himachal Pradesh and various eminent experts. In all cases it has been recommended that 0.38g PGA value is adequate. Project has been discussed twice in NCSDP and in second review after going through the various reports prepared by above mentioned institutes same PGA value of 0.38g was recommended. Further following points are submitted for better understanding of the issue.

- (i) The site specific seismic study requires identification of source zones around the project and the maximum earthquake which can occur at the shortest distance from the site. In case of Subansiri Lower Project, MBT and HFT are the nearest source zones with estimated seismic potential of only 7.5 and 6.5 magnitudes respectively. However, earthquake of magnitude 8.0 has been considered.
- (ii) The Shillong earthquake (8.7M, present assigned value 8.1M) of 12<sup>th</sup> June 1897 occurred at a distance of about 320 Km from Project and it is not a Himalayan earthquake. Assam earthquake (8.4M) of 15<sup>th</sup> August 1950 occurred at about 250 Km from Project site in a Mishmi massif region. Both earthquakes occurred in different Seismic source zone outside the source zone of the project. It is not appropriate to bring these 8.7 magnitudes in the tectonic province of the project site.
- (iii) In India major earthquakes have been of the order of 8.0 to 8.7 and focal depth of these earthquakes ranged between 20-40 km. it has been studied extensively that great Himalyan earthquake of more than 8.0M in the Indian Plate occurs at a depth of 20-40 km.

- (iv) Even all over the world, the great earthquakes of 8.5 M or more have originated at a depth of 20 km or more. These observations clearly indicate that no great earthquake had originated at depth less than 20 km.
- (v) This is because unless there is sufficient volume of rockmass involved (adequate rupture width, length, thickness/depth), the required magnitude cannot be generated. Therefore the view of the expert group for 8.5 magnitude at 10 km depth (the basis of 0.5g PGA) is not appropriate. Taking into consideration 20 km depth for 8.5 magnitude, the PGA value comes to 0.35g, which is lower than the approved value of 0.38g.
- (vi) PGA is not used directly in seismic analysis and it is one of the inputs for generation of response spectra required for seismic analysis of dam. Utilizing the PGA of 0.38g highest spectral acceleration value of 1.14g has been recommended in the response spectrum. However for Subansiri Lower dam, time period is 0.667 sec and the highest spectral acceleration value corresponding to this time period is 0.8g. Even if 0.5g PGA value is considered then the highest spectral acceleration value will be 1.05g less than the recommended value of 1.14. this clearly indicates conservatism in the recommended values.
- (vii) NHPC has installed a network five seismographs and one accelerographs in 2006 around the project site for monitoring the seismic activity. As per the data collected, most of the earthquakes are occurring around MBT at depth of about 25 km. as per latest report prepared by Institute of Seismological Research, Gandhinagar, Gujrat (Jan to Dec 2015\_ earthquakes of magnitude 4.0M or larger are occurring at a distance of 100 km or more from the project.
- (viii) Further, NHPC has installed 46 accelerograph at all its power stations for recording the PGA values of earthquakes at its Real Time Seismic Data Centre. This network covers the entire Himalaya and NHPC is the only hydropower utility to have such facility in the country. It is to be mentioned that more than 230 earthquakes data has been recorded and the highest PGA value recorded so far (Nepal earthquake, 7.8M) is 0.0548 g which was recorded at Rangit power station. At Subansiri Lower Project, PGA of Nepal Earthquake was less than the 0.01g. USGS (United States Geological Survey) has recorded highest PGA value of 0.164g for this earthquake.

Values of all other earthquakes recorded by this network are lower than these values.

In view of above, it is clearly indicated that the PGA value of 0.38g adopted for Subansiri project is not only adequate but more on a conservative side. Chronology showing the findings of various committee and experts who have studied the issue and have concurred with the original recommendation of PGA 0.38 g which was also made by the NCSDP is enclosed herewith as Annexure 15 for ready reference.

As such, when eminent experts in the field and the highest body in the country for seismic aspects of river valley projects, NCSDP, has discussed this project twice and found that PGA value adopted for SLP is in order, there is no scope for any apprehension or suspicion by the petitioner who is of course not an expert in the field.”

60. In this context, reply of the Brahmaputra Board being relevant is extracted below :

“Brahmaputra Board initially proposed a rockfill dam of 257m. high with toe at Reduced Level at 340m. above the mean sea level (msl) and live storage of 1.10 Billion Cubic Meter (BCM) at the same location, as that of LSHEP. Due to greater height of the dam proposed by the Board, the reservoir created would have been very large (Capacity = 14000 MCM), with provision for storing excess monsoon flow, as well as, flood storage. As the reservoir of the proposal would have submerged Daporijo Township, Tamen Township and several other villages, the proposal could not be implemented. Later, in 1995, Brahmaputra Board proposed alternative to the single dam proposal with a cascade of 3 (three) dams. The lower dam was located at the same location as that of LSHEP location, whereas the upper two dams were proposed at upstream of Daporijo Town on Subansiri River and upstream of Tamen Town on Kamala River. These two upper dams were proposed with sufficient storage and flood cushion, whereas, the lower dam was proposed as a run of the river scheme. Board started investigation of the upper projects from 1996 onwards. However, as per the solemn decision and instructions of the Government of India, the entire proposals on Subansiri River were handed over to NHPC for finalization of project proposal and their implementation.”

61. **Dam Design** : According to the Applicant, although accepted by them, the Respondent no. 3 has failed to review the dam design recommended by TEC. Denying such allegation, it is submitted by Mr. Pathak that pursuant to the report of the TEC on certain deficiencies pointed out in respect of energy dissipation arrangement, adequacy of cut off wall and dam design, the respondent No. 3, has taken all possible measures for remedying those.

62. It is asserted that the recommendations of the DDRP comprising of experts from CWC, IIT Roorkee, GSI, CWPRS, CEA, that was made after carrying out detailed study of the site conditions, weak rock characteristics and dam design, were accepted by the Ministry of Power, Govt. of India (MoP) and accordingly the project proponent NHPC has since agreed to modify its original design in order to provide additional safety to the dam and its foundation in the long run.

63. **Dam Foundation Competency** : In his rejoinder, it has been alleged by the Applicant that the rock on which SLHEP is being built is soft sandstone with low comprehensive strength and low elastic modules with slackness characteristics which according to the Respondents, this aspect has also been taken care of. We find that in the affidavit of the Central Water Commission, Respondent No. 6, it has been stated that the bed rock on which Subansiri dam is founded is regionally known as *Middle Siwaliks* which is universally given the nomenclature of sandstone and that sand rock is a loosely used field term. Competency of the rock has been evaluated during investigations by various government agencies viz., CWPRS, Pune, NEHARI, Guwahati, CSMRs, New Delhi, IIT, Delhi, CMRI/CIMFR Dhanbad from 1981 to

2008. Based on the engineering rock parameters and other engineering requirements, concrete gravity dam was proposed and approval had been accorded by CEA after satisfying itself with all rock parameters considered by the clearing agencies, viz., GSI, CWC, CSMRS, and CMRI, Dhanbad, in having arrived at the finding after analysis that for Subansiri dam, Factor of Safety (FOS) for stability and stress consideration were well within the permissible limits.

64. **Minimum Sustenance Flow** : Mr. Upadhyay has laid much stress on maintaining minimum flow of 450 cumec water for survival of the Gangetic Dolphins and various other species of aquatic life including fishes emphasising that ecological importance of Subansiri river also cannot be overlooked. Similarly, as per the Ld. Counsel, insufficient and inadequate sustenance flow would jeopardise the rights and livelihood of the riparian people living downstream who are a specially protected scheduled tribe who depend on fishing for food. In support of his submissions, reliance has been placed by him on ***Narendra Kumar –vs- State of Haryana: 1995 AIR SC 519.***

65. Responding to the above contentions, it is submitted on behalf of the Respondents that the TEC and other expert bodies recommended release of minimum 240 cumec of water from the dam by operating one turbine continuously during lean season (winter) to ensure survival of bio-diversity and different aquatic animals like fish, flora fauna and Gangetic Dolphins. Referring specifically to the affidavit of the Brahmaputra Board which had recorded 300 cumec as the maximum achievable during the lean months, it was submitted that minimum water flow of 450 cumec as suggested by the Applicant was not possible and that the Respondent no. 3 shall be releasing

240 cumec of flow by operating one turbine round the clock during lean period which will be further augmented by additional flow of about 35 cumec from different tributaries and nulhas downstream, which of course is, refuted by Ld. Counsel on behalf of the Applicant, who submits that most of these tributaries in fact get dried up during the lean months as observed during the field studies.

66. It was submitted that even release of 240 cumec of water during the winter months as committed by NHPC will hold up the water flow for 20 hours of the day by operating one turbine when the project is "off grid" and would create flood like condition in the downstream during peak load generation of 4 hours by eight turbines. It is also contended that release through turbines for the purpose would dry up the river from the dam upto the Power House Point, a distance of about half a Kilometre, as the water through the turbine will be released only through the Power house to the river

67. The Ld. Senior Counsel for the Respondent No. 3, on the other hand would contend that as per CWC, the distance between the dam spillway and power house structures being very short, shall always be filled by backwater from the tail race release point as per tail water levels and turbine discharges. Further that with the modification of the spillway sections as recommended by DDRP, the distance between the dam toe and start of tail race channel (first unit) has been reduced to approx 250 m only. That as the normal tail water level shall vary between El 104.50m to El 109.50m depending on the running of number of turbines, water level shall always be maintained till the dam toe due to back water, the river bed profile being

almost flat in the stretch between dam toe and tailrace release point. Therefore, contrary to the apprehensions of the Applicant, certain depth of water shall always be available and the river shall not run dry.

68. **Dolphin preservation :** According to the Applicant, as per international studies and UGC report, unless 450 cumec water is available during lean season, there is every possibility of the Gangetic Dolphins going to extinction. The Respondents, relying upon studies undertaken by various experts and the Brahmaputra Board, however, would strongly refute this apprehension and reiterated that 240 cumec flow during lean period was sufficient.

69. **Downstream Impact Assessment :** Mr. Upadhyay has urged that no downstream impact assessment has been carried out beyond 10 kms and, therefore, the downstream EIA study was incomplete rendering the EC which was granted on such study unreliable. Mr. Pathak on the other hand would submit that at the material time, notification governing grant of EC was covered by EIA notification, 1994 which prescribed study only for 7 Kms radius but by EIA notification, 2006, it has since been revised to 10 Kms. Further, a comprehensive cumulative Impact and Carrying Capacity (CI & CC) Study of the entire Subansiri Sub Basin including downstream Impacts has been conducted by CWC as per Terms of Reference approved by EAC/MOEF and the recommendations have been accepted by the MOEF on 27.4.2016. Even the Project Oversight Committee (POC) according to him had recommended 240 cumec discharge with at least minimum 3 m depth during lean season for sustainability of flora and fauna. The recommendations of the POC which also included raising and strengthening of bank embankments up to 30 Kms downstream and installation of "Trail Dyke" and "Jack Jetty"

system for control of river bank erosion have been accepted by the NHPC for the implementation of which funds have been allocated.

70. **Run of river :** It was strongly argued by Mr. Upadhyay that the project is not a true “run of river” project that would allow water to flow through or over the top of the dam. Instead, it is a “peaking dam” where water will be released through turbines from a power station located about 500 m away with pondage for supplying water to meet the diurnal or weekly fluctuations of demand and that the project has no flood moderation component. Denying such contention it is submitted by Mr. Pathak that even though it is a peaking dam and not a conventional run of river dam, the Dr. Thatte Committee (TEC) has recommended for making provision of a reservoir with storage capacity of 645 MCM between FRL and MDDL and another one nearly 120 MCM between FRL and MWL. During the monsoon season the reservoir will be kept at a level much below FRL. This will facilitate regulated flow preventing any flash flood situation in the downstream during the rainy season. It is further submitted that manuals are prepared for all Hydro Electric Projects that prescribes guidelines for reservoir filling and gate operation. Based on the inflow discharge, a required number of gates are opened partially in order to maintain the outflow at the same rate as the inflow or, for higher discharges, the outflow less than the inflow due to available storage. With one turbine operating continuously, water will always be flowing in the downstream of the river. Hence, there is almost no possibility of any accident in the downstream due to sudden release of water in the river.

71. **Panic release :** The Applicant apprehends panic release of water through gates in situations of natural calamity that would give rise to flood in the downstream. Mr. Pathak, however, contends that there was no possibility of such a situation arising in view of the gate operation protocol for inflow in the reservoir and step wise operation of gates in place.

72. **Release of water without human control :** It is one of the contentions of the Applicant that to avoid any panic release, human control should be avoided and the release of water should be made automatic. This plea is also controverted for the same reason as stated earlier.

73. **Different Committees :** Mr. Sanjay Upadhyay would submit that the fact that as many as nine different Committees consisting of specialists were constituted to resolve the issue could not arrive at a consensus would clearly demonstrate that all was not well with the project. Strongly contesting this, it is stated on behalf of the Respondents that the committees were set up in order to be fully satisfied with the safety of the dam. That there may have been differences amongst members of the committee but, ultimately consensus was arrived at and only thereafter the project was undertaken. It is submitted by Mr. Gautam Chowdhury, Ld. Counsel for the State of Assam that at the initial stage, there were some reservations on the side of the State of Assam on the viability of the project but recently a resolution had been passed in the Assam Legislative Assembly that the project should be completed as early as possible and that the initial doubts as regards the usefulness of the project for the people of Assam no more exists.

74. Lastly, by referring to *Alakananda Hydropower Company Ltd. –vs- Anju Joshi & Ors*, (2014) 1 SCC 769, Mr. Upadhyay has submitted that the Hon'ble Supreme Court, after the calamity that struck Kedarnath temple in Uttarakhand in June 2013 involving large scale destruction of property and loss of human life, held that detailed scientific study was called for on the projects under construction and the ones that were proposed and directed to put in place proper disaster management plan to save lives and property. Accordingly, MOEF was directed not to grant EC or forest clearance for any hydroelectric power project in the State of Uttarakhand leading to 24 projects being stopped and the MOEF being further directed to examine the significant impact on the biodiversity of Alaknanda and Bhagirathi River basin. It is contended that following the direction of the Hon'ble Supreme Court, the present project should also be reviewed and, if necessary, closed to save human life and the adverse impact on biodiversity.

75. In reply to this contention, Mr. Kushagra Shah, Id. counsel for the Respondent No. 6, CWC, has contended that flood control aspect of Subansiri basin was conceptualised by Brahmaputra Board taking Subansiri Upper Project (SUP), Subansiri Middle Project (SMP) and Subansiri Lower Project (SLP) in conjunction. This planning has remained the same and SLHEP is being constructed exactly on this line. According to Mr. Shah there is no structural or design deficiency in SLHEP dam. Therefore, the allegation that due to deficiencies, a cataclysmic catastrophe may occur is nothing but an attempt to misguide the Tribunal. It is further submitted that Uttarkhand disaster happened due to extreme climatic conditions and not due to any mismanagement by dam owners as clearly brought out in the technical

committee report by CEA/CWC to the reply of respondent No. 6 to MA No. 6/2014/EZ filed by the applicant.

76. **Alternative dam design by the applicant :** The Applicant has suggested an alternative dam design by lowering the height at 81-86m from the present 116 m. Along with the project report said to have been prepared by Shri Pradeep Kumar Bhuyan, an ex-IITan, a plan of the proposed alternate dam design has also been filed. The project according to him envisages a true run of the river dam as the natural flow of water will be maintained over the dam by lowering the height to 81m. It is submitted that the alternative proposal can be easily implemented by adaptation on the existing structure and, if accepted, will completely eliminate all the downstream ecological issues associated with Peaking hydro electric project like SLHEP as the river will flow freely downstream of the project without human control. Mr. Upadhyay has referred to letter dated 11<sup>th</sup> August 2017 of Dr. D.N.Buragohain, Emeritus Professor, Deptt. of Civil Engineering, IIT, Guwahati annexed to the affidavit filed by the Applicant conveying that he had carefully gone through the alternative proposal, the salient features of which were reduction of the dam height from 210 m level to 193m level and increase in the height of the spillway section from 150 m to 175 m, and that he had also discussed the matter with Prof. Arup Sarma, specialised in Water Resources Engineering, who had opined that the proposal was eminently feasible as it did not call for any additional construction but had only modified the present dimensions and, at the same time, it would also be able to address all issues raised by various stake holders and resolve those to a large extent although there would be reduction in the generation capacity by about 10-15%.

77. The proposal has been objected to on behalf of the Respondent No. 3 in the affidavit filed by them on various technical grounds which we for the sake of convenience is reproduced below :-

“Petitioner has given a schematic diagram showing the comparison of present dam design with the free flowing Subansiri dam without any design details stating that it will function as base load HEP. The salient features of the dam has been given as below:

1. Dam height = 81m/86m meaning
2. Dam top = EL 175/180 m
3. Invert level = El 160 m
4. Spillway Length = 100 m

This is crude and inappropriate design which does not comply with the basic design principles of dam.

The preliminary observations are as given below:

- i. The dam design with overflow spillway does not comply with the basic requirement of provision of adequate spillway capacity of PMF i.e. 37500 cumec for large dam. With the reduction in dam height and raising the spillway crest, spillway capacity will be drastically reduced thus endangering the dam safety.
- ii. With intake invert at EL 160 m and Reservoir Level as EL 175 m/180m, the required water seal for vortex free entry of the water in the intake will not be available thus violating the basic principle of intake design.
- iii. The dam spillway design does not comply with the practice of sediment management as the crest level is at El 175 m/180 m which will not allow the sediment to pass through the spillway and the entire reservoir will be filled with sediment above intake level of EL 160 m very fast making the project redundant.
- iv. The gross storage capacity of suggested free flowing Subansiri dam works out of 602 MCM / 696 MCM for FRL of 175 m/180 with no flood control storage capacity, thus having no flood control benefits to the downstream people.
- v. Due to reduction in the height of the dam and consequent reduction in the rate head, the capacity of the plant would reduce from present 2000 MW to about 1350 MW only. The plant would be able to generate 1350 MW for 2 months period only and for about 7 months period it would generate in the range 140-650 MW only i.e. less than 50% of the total capacity of the plant.
- vi. The change in rated head would also result in the operation of the already supplied turbine generator equipment in lower efficiency ranges leading to increase in losses and as well as cavitation and other mechanical problems due to continuous operation of machines at lower head.

Thus in view of the above, this suggested overflow type base load HEP will not meet the mandatory safety requirement of IS code and does not fulfill the functional requirement of flood moderation and energy generation. Thus, it shall be technically unviable and likely to be commercially unviable too.

It is pertinent to mention here that POC (Assam) and POC (GOI) are unanimous that the reduction of dam height is not possible. TEC in its report at Section-VI 'Beneficial Impacts' para 156 has mentioned that the demand for flood control is genuine. The demand is however, in conflict with demand not to construct the dam or to construct the dam with a smaller height.”

78. We have given our thoughtful consideration to the rival contentions, perused the pleadings and the documents placed on record.

79. Replies of the Respondents to the OA and the rebuttals given on their behalf by the Id. counsel appearing for them during the course arguments no doubt give an impression that all apprehensions expressed by the applicant have been duly addressed.

80. In the OA the Applicant has raised serious questions on the downstream impact of the project on various grounds. Those are : (i) deficiency in sustenance flow; (ii) jeopardy to the lives of the riparian people living downstream of the dam and dolphin habitat; (iii) the need for release of sustenance flow automatically without human control; (iv) disconnection of water from the dam up to the tale race release point 500 m downstream of the dam; (v) flushed sediments that would destroy the agricultural fields during high flood as a result of deposit of sand/sediments; (vi) defective EIA study having been restricted to only 10 Km downstream; (vii) lack of flood control measures, etc.

81. By filing MA 5/2014/EZ the Applicant sought to place on record certain documents, more particularly, the Thattee Committee's report (TEC) and while doing so, concern also has been raised by them on the safety of the dam based on the observations of the TEC. By order dated 6.8.2014, the MA was allowed only in so far as it related to receiving additional documents was concerned.

82. On 6.8.2014, however, the Applicant filed MA No. 6/2014/EZ seeking for stay of the construction activities at the LSHEP as it was reported that the respondent No. 3 was going to take up the project shortly. It was stated that an order of the stay against the resumption of the project was paramount in view of the observations and recommendations made by the TEC with respect to design and structure of the dam. The TEC was constituted by the Planning Commission to (i) suggest changes in design/ dam structure if found inadequate; (ii) examine flood management and spillway arrangement; (iii) assess impact on downstream due to the flood and (iv) suggest measures for safeguarding the environment and for effective development with respect to the construction of the LSHEP. Replies to the MA was filed on behalf of the Respondent No. 6, Ministry of Water Resources, on 11.3.2015 and on behalf of the respondent No. 3, NTPC on 9.9.14 denying allegations contained therein re-emphasising the assertions made in their affidavits-in-opposition to which we have alluded to.

83. During the course of arguments, the Ld. Counsel for the Respondents strongly urged that the Applicant had abandoned the matter relating to construction of the dam and in fact, had categorically pleaded in the OA that he was not challenging the construction of LSHEP dam and had confined his

relief only to the downstream impact on the ecology of the river and the lives of the riparian people. The objection was in addition to their contention that the Hon'ble Supreme Court had permitted them to commence with the project to which we have adverted to.

84. The respondents, by filing affidavits in opposition, sought to negate the concern raised in the MA on several grounds which are indicated below in brief :-

- a) Thatte Committee in its report recommended constitution of a Dam Design Review Panel (DDRP) for reviewing the dam design relating to energy dissipation arrangement and other connected matters recommending completion of the review expeditiously to ensure that the project was not delayed.
- b) DDRP had accordingly been constituted and its report submitted to the Ministry of Power in June 2013 as per which modification of design and some engineering features in the dam were recommended.
- c) All recommendations of the DDRP addressing the issues raised by the Thatte Committee (TEC) had been accepted which also included dam design and safety.
- d) The Joint Steering Committee constituted as per recommendations of the Thatte Committee to study the downstream impacts, had also submitted its recommendations which have since been accepted and would be implemented as and when construction of the project will resume.
- e) The assertion that the reservoir would be at the Full Reservoir Level (FRL) during monsoon was denied as being without any substance

as the reservoir level would be maintained at the minimum level (MRL) during monsoon. A manual in vogue in other projects containing elaborate procedure for opening of the gates for a given inflow in the reservoir containing stage wise operation would be prepared to avoid any such contingency.

f) That, as per the Thatte Committee's report at para No. 32, the seismic design parameter of SLP is not likely to be significantly influenced by any earthquake of the magnitude of the 1897 Great Shillong (8.7) or 1950 great Assam earthquake (8.5) thereby negating the views of the Expert Group.

g) The NHPC had obtained approval of the seismic design parameter from the National Committee for Seismic Design Parameters (NCSDP) constituted by the Govt. of India which according to the Thatte Committee was obligatory for all river valley projects. The question on the PGA value of 0.50g raised by the Expert Group was re-examined by the Deptt. of Earthquake Engineering, IIT-Roorkee, and, according to the respondents, Prof. A.S.Arya who participated in the deliberations, opined that it would be adequate for the project to adopt 0.38 PGA value which was accepted by the NCSDP in its special meeting held in March 2013. Moreover, the Thatte Committee had commented that there was no danger to safety of non-overflow dam even for PGA 0.50 (MCE).

h) The Central Water Commission (CWC) had already been entrusted with the task of Dam Break Analysis as per the Thatte committee's recommendation which was in progress.

- i) There was no alteration in the normal river course between the dam and tail race tunnel which is about 250 m as it will be filled up by back flow of the water with one machine running continuously for releasing water in the lean season thereby always maintaining certain depth of water.
- j) Since the Subansiri river does not have a minimum flow of 450-550 cumec during lean season, suggestion of the applicant to maintain minimum flow to that extent would be impracticable. That the NHPC has agreed to release 250 cumec of water through tail race tunnel by running one machine continuously during the lean season and, therefore, the stretch of 250 m between the power house and tail race tunnel would never remain dry as alleged.
- k) No dam from the many constructed by the NHPC had experienced structural problems even from strong earthquakes that had occurred in J & K, Sikkim and Andaman & Nicobar Islands.

85. The Respondent No. 6, MoP, in their objection, emphasised on the very stand taken by the respondent No. 3.

86. As already observed earlier, when MA 6/2014/EZ was taken up to consider the prayer for stay of the project, it was submitted by Mr. Khusagra Shah, Ld. Advocate for the Respondent No. 6, that the work on the project was kept pending in view of agitation against it and had not been resumed and further that a “ Project Oversight Committee” (POC) had been constituted by the Ministry of Power to examine and resolve the issues

relating to the project and to oversee its completion during its implementation.

87. By order dated 20.1.2015, it was directed that for the reasons stated on behalf of the Respondent No. 6, adjudication on the injunction application would be considered on the next date of hearing, granting opportunity to the parties to file their responses to MA 6/2014/EZ amongst others. We may not delay ourselves further on this, since as already noted earlier, even though the main project work admittedly had still not resumed, the Tribunal vide order dated 11.12.2015, though redundant, also prohibited it except to the extent of undertaking urgent repair and maintenance work and on 24.05.2016, that order was directed to remain operative until further orders.

88. On 2.8.2016 report of POC was filed by the Id. counsel for the Respondents No. 1, 6 and 7 to which the parties filed their responses and thereafter the matter was listed for hearing. However, respondent No. 7, the Brahmaputra Board, filed their affidavit only on 29.3.2017 when Mr. Sanjay Upadhyay, Id. counsel for the Applicant, had already concluded substantial part of his argument. He, therefore, prayed for an opportunity to file a rejoinder. Although the hearing continued on that date, it could not be concluded. Arguments were again heard on several dates thereafter and concluded on 26.5.2017 permitting the parties to file short synopsis of their arguments. But as those were filed during the intervening summer vacation and several more affidavits were filed by the parties on the later dates, additional arguments were again advanced by them on 11.8.2017 on which date the matter was finally reserved for judgement.

89. As would appear from the above narration of facts and the reports of the EG and TEC, the questions for determination in the case stood widened bringing within its sweep matters pertaining to seismology, geology and, as a natural corollary, the safety of the dam.

90. As observed earlier, the Thatte Committee (TEC) was constituted as the Expert Group (EG) and the NHPC could not converge in their views regarding which we have briefly alluded to earlier. The TEC was thus directed to make suggestions on the terms of reference which brought within its fold the differing views for resolution which, in fact, was the purpose for which the TEC was constituted. There can be no doubts on this, as the preamble of the report of the TEC sets out in clear terms the facts and circumstances under which the TEC was constituted as would appear from its extract reproduced below :-

“PREAMBLE

Subansiri lower Hydroelectric Power Project (SLP), one of the key projects in the Subansiri sub-basin of the river Brahmaputra, is under construction through NHPC since 2005 in Arunachal Pradesh, at a place called Gerukamukh where the river enters the plains. Plate-1 shows the location of Dam as also the interstate boundary between Arunachal Pradesh and Assam. The project consists of (i) a concrete gravity dam 116 m high above the deepest river bed and 23 m high above deepest foundation level and (ii) a Power House with an installed capacity of 8 units of 250 MW capacity each totaling 2000 MW about 50% of the work in terms of cost has been completed, incurring an expenditure of Rs. 5689 Crores upto May 12 of estimated cost of Rs. 10667.09 crores (Revised Cost Estimate at December 10 PL).

Initially, there was sporadic criticism of the project from sections of civil society in Assam with All Assam Students Union (AASU) in the forefront. The criticism gradually became strident ending with a crisis leading to stoppage of work after December 15, 2011.

At the instance of Govt. of Assam (GoA), in the context of mounting criticism against the Project, NHPC constituted an Expert Group (EG) in May 2008 to evaluate the downstream (d/s) impacts of the Project. The membership of the EG included professors from IIT-Guwahati (IITG) Guwahati University and Dibrugarh University. The EG presented its report in March 2011 after due deliberation of the project planning and its design philosophy, a site visit to SLP, a visit to Bhakra Dam and discussions with NHPC.

The views of the EG were at variance with those of NHPC and could not be reconciled even after extensive consultations. The recommendations of EG were discussed in Assam Assembly and later considered by a House Committee (HC) of Assam Legislative Assembly, who by and large reiterated EG's recommendations. EG's report was also discussed by the Expert Appraisal Committee (EAC) of Ministry of Environment and Forests (MoEF) in the presence of GoA, EG and NHPC representatives.

As desired by GoA, NHPC also constituted, a Steering Group (SG) to examine Part II of EG report and identify feasible remedial measures to take care of possible d/s impacts, flood, erosion etc. and report on their physical/financial aspects (Apr 2011).

Shri Jairam Ramesh, the then Minister of State for Environment & Forests visited Assam in September 2011 and had consultations with certain civil society groups on the issue of big dams in the north-east. He brought their grievances to the notice of Prime Minister vide his letter dated September 16, 2010.

At the instance of PMO the Planning Commission constituted a Technical Experts Committee (TEC) with Dr. C.D. Thattee and Dr. M.S. Reddy as Members to review the status of SLP and to recommend/report on how NHPC could move forward the Terms of Reference (ToR) for TEC are given in the Office Memorandum dt. 12.1.2011 constituting the Committee.

The TEC held four formal meetings, one meeting was held by Planning Commission with TEC and all GoI organizations concerned, two meetings were held with CWC/CEA and several meetings were held with NHPC, CWPRS and Brahmaputra Board (BB). TEC visited the Project and travelling by boat, went around the West bank of Majuli Island, where River Subansiri meets Brahmaputra. TEC members individually kept in touch with CWC/CEA/NHPC/CWPRS from time to time. TEC lastly considered at the instance of the Planning Commission, one after another, views expressed by i) two local experts named by GoA and ii) CWC/CEA. Their views have been taken onboard in TEC's report appropriately where necessary. "

91. It would appear from the report that the work of LSHEP was started in the year 2005 by the NHPC after obtaining all requisite clearances and thereafter initial impediments that arose in the form of various litigations were overcome but, again soon after the construction works were taken up, there were local agitations against the project leading the Govt. to constitute a Group of Experts (EG) in December 2006 comprising of experts from IIT, Guwahati, Guwahati University and Dibrugarh University with the following terms of reference :-

- i) Assessment of impacts on environment;
- ii) Likely spread of their distribution pattern;

- iii) Management plans for direct impact zones;
- iv) Development plans for affected people/villages and
- v) Developing deliberative mechanisms to minimise the impacts.

92. A preliminary report of the EG was submitted in 2009 and, when deliberations were in progress between the Assam Govt. and the NHPC, a House Committee (HC) of Assam Legislative Assembly was constituted with 19 members which submitted its report on 17.7.2010 containing the following major recommendations :-

- A. The dam being constructed by the NHPC at Gerukamukh should include multipurpose provisions like irrigation, flood control, anti erosion measures, development of roads and embankments etc. for the d/s areas. The expenditure likely to be involved in this work should be included in the DPR.
- B. The NHPC should ensure adequate flow of water during the lean period in the river Subansiri and take up measure for flood control during the rainy season in the downstream areas;
- C. In order to maintain regular flow of water in the river Subansiri, NHPC should take steps to operate one turbine continuously for 24 hours instead of total eight turbines so that excessive flow of water does not create heavy flood in the d/s areas;
- D. Adequate measures should be taken by the NHPC for conservation and sustainable development of aquatic

resources like fish, dolphin and also flora and fauna, etc, in the downstream areas.

- E. The GOA should consider the recommendations made by the EG in its reports at para 10.2.2 Part II.

93. After briefing the Chief Minister (CM) and other Ministers of Govt. of Assam as well as EG members in September 2010 on various issues including the downstream impact issue and SLP safety towards which the NHPC agreed to take reasonable and feasible corrective measures, the Govt. of Assam submitted the EG report and the dam safety report to the MOEF which was discussed in the meeting of the Expert Appraisal Committee (EAC) on 7<sup>th</sup> October, 13<sup>th</sup> November and 11<sup>th</sup> December, 2010 at New Delhi in which it was decided to get the issue of Seismic Design Parameters (SDP) raised by the EG in their report to be reviewed by another group of experts from relevant disciplines from IIT, Guwahati, IIT, Roorkee, EG and NHPC to further discuss the issues raised in the EG report pertaining to seismicity, earthquake, etc.. It would be sufficient to note here that Prof. A.R. Arya, an eminent scientist in the field of earthquake engineering, submitted his opinion on 7.6.2011 confirming that the PGA value of 0.38g arrived at earlier was appropriate for the project. Apart from this, there were other reports on the studies undertaken by the Wadia Institute of Himalayan Geology, Dehradun, and M/s Alfa Geo India Limited, Hyderabad, who submitted their reports in September 2011 and March 2012.

94. The EG submitted its final report in March 2011 containing views that were remarkably different from that of the NHPC. The report which was in two parts dealt with the feasibility of the dam in Part I and, in

Part II about the mitigation measures to be taken to minimize the downstream impact.

95. The main issue raised in Part II of the report of EG related to (i) dam design inadequacy due to geological and seismological aspects, (ii) flood control; (iii) potential of landslides in the reservoir area and in the upstream causing unsafety for the SLHEP. We find the TEC having specifically recorded that the NHPC and the EG could not reconcile their differences especially on seismological and the geological aspects and that the NHPC had stood firm on the seismological aspects of the dam design on the ground that the site specific SDP studies of LSHEP had been worked out by the DEO, IITR which was cleared by the NCSDP further observing that the NHPC had not reacted on the EG's observations on the dam foundation characteristics.

96. The Joint Steering committee (JSC) constituted by the NHPC to broadly examine the feasibility of the recommendations of the EG report, also could not bring about any resolution primarily because of the absence of the Members from IIT, Guwahati who did not participate on the ground that two of its faculty members were members of the EG.

97. While dealing with seismological aspects, the TEC held the view that the concern for safety of the dam in the seismic environment of the NE region was understandable but found the recommendations of the EG tending to be rather ambivalent. The TEC after setting out its views on the aspect in paragraphs 26, 27 and 28 of its report, deliberated on the opinions of different experts on the seismological issue in paragraphs 29 to 41 and subparagraphs thereunder and recorded the following observations :-

“42. To sum up, the above review thrown up the uncertainty and unpredictability of ways for determining seismic coefficient for EQs. While 0.38 g recommended by ITTR might be based on judiciously selected date, though subjective, EG recommended PGA value of 0.5 g cannot be sidestepped unless so proven by scientific assessment in the overall context of the various responses from experts.

43. Notwithstanding the professional competency of NCSDP, TEC is actually aware that the debate on the source and magnitude of an EQ that could affect SLP is likely to continue quite some time. Even COLD guidelines are not specific. There is ambivalence in reference to risk and hazard evaluation. There is also a public perception “ Based on recent geodetic data. Biham et al (201) argued that many segment of Himalaya is presently ready for generating a great earthquake (Kayal 2010 (refr. 4,12)”. TEC, therefore, considers it prudent to study the behaviour of SLP dam under PGA of 0.5 g (MCE) which will enable to allay appreciation on the design of dam as discussed further in Section III (refer para 74).”

It is imprudent to consider PGA as a single entity that determines the seismic design. It must be considered the Response Spectra, the Spectral Amplification Factor, the dumping ratio, the structure/foundation composite behaviour, their dynamic properties. Above all, the size and the shape of the dam structure are all important. Dynamic analysis helps in better appreciation of the suitability of the design. The decisions will of course depend on the interpretations of the results based on the assumptions.” (Underlining supplied)

98. The next consideration being on the prevention of landslides though of considerable importance, need not be looked into at the moment. However, on the geographical aspects, which are directly related to the seismology would require some consideration. Without going into the details of the observations, it would be sufficient to note that after examining various reports and opinions of experts, it was concluded by the TEC in paragraph 56 of its report that the “above assessment of the foundation rock leads to some concern about the stability of LSHEP Dam as planned and as under construction..... “ .

99. On the hydrological aspects, the Committee after its study recommended the following :-

- i) Dredging of river bed to maintain its original level;
- ii) Providing flood storage (in the dam) to minimize floods d/s;
- iii) Minimising utilization of river water;
- iv) Maintaining minimum (environmental flows);
- v) Independent (integrated) control of reservoir operations
- vi) Neutralizing the negative impacts on the livelihood of local population due to impact on river related resources;
- vii) Preventive measures against vector born diseases
- viii) Preservation of Dolphins habitats.
- ix) Establishing eco-hatcheries and taking measures to conserve migratory species of fish
- x) Emergency Action Plan (EAP) for dam break contingency.

100. In Sec III of the report, the TEC has dealt with dam design review that covered the following aspects of the dam design :

“A . Hydraulic Design: Spillway Capacity;

B. Structural Design: Stress Analysis

C. Foundation competency.

D. Energy Dissipation Arrangement (EDA)

E. Impact of Landslides along reservoir periphery

F. Dam Design Review Panel (DDRP)

101. The TEC noted that the Techno- Economic Clearance of LSHEP was conditional as usual and that the NHPC had not been able to show as to how the different conditions were met. It was further observed that the CEA/CWC were also unable to provide any detail and that it was necessary for them to carry out the exercise in association with NHPC.

102. Observing *inter alia* that weak foundation rock was by far the most important and critical aspect of LSHEP dam design, it was observed that the background of SLP planning was replete with references to the weak foundation and that “there is nothing on record either in NHPC or elsewhere to demonstrate as to when and how or who took the decision on the type of dam and foundation treatment to the satisfaction of CWC, which had made explicit comments on the foundation and its suitability to support the proposed concrete dam” and that “the foundation rock in SLP did not conform to the generally accepted standards of a concrete dam”. On the Energy Dissipation Arrangement (EDA) also, we find the TEC having observed that the NHPC had not made any attempt to carry out model studies for ski jump/plunge and stilling basin for finalisation of the type of EDA on the basis of performance of model studies and techno-economic conditions.

103. The other details discussed on this aspect need not be entered into but we may only note that the TEC considered it necessary for the NHPC and DDRP to take into consideration all aspects on EDA and dam design and foundation competency and to advise on remedial /strengthening measures keeping in view the present status of the construction.

104. On the aspect of downstream impact, several aspects were considered and discussed which *inter alia* included reduction in the flow, its impact downstream on the dolphin habitat and agricultural fields, ground water, effect on the downstream riparian people and fisheries, restoration of ecological degradation, etc., after which it recommended formation of a Subansiri Independent Integrated Reservoir Management Authority (SIIRMA) under an Act of Parliament after careful consideration of its composition, constitution, power functions and responsibilities that would include flood control and release in lean season to meet minimum flow regulations suggesting further that the planning, design, construction and operation of the reservoirs should be the responsibility of the Central Govt. Through the Brahmaputra Board.

105. Discussing on the issue pertaining to flood regulations, it was ultimately suggested that while converting multipurpose storage projects into run of the river (ROR) single purpose HP projects, Govt. of India should review the present status and incorporate storage for flood control wherever possible on the basis of and under guidance of CWC. Contrary to the claim of the Respondents, it was observed that *SLHEP is not a conventional run of the river project and further acknowledged that storage of 645 mcm was not a negligible storage by any reckoning and that the only reason for maintaining high reservoir level during monsoon was to maximise generation of power.* It was ultimately suggested that the SLHEP can manage flood moderation only through an intelligent operation of reservoir space of about 765 cumec available between MDDL at 181 m and MWL at 208.25 m supported by real time inflow forecast.

(italics supplied for emphasis)

106. We may also mention that the principal concern on the downstream impact articulated and discussed extensively is the minimum flow or environmental flow that was necessary to be released. Discarding the details discussed on this, it had been agreed by the NHPC that they would ensure continuous and uninterrupted release of at least 250 cumecs in addition to 6 cumec initially recommended by the EAC and accepted by the MOEF while granting Environmental Clearance for the project. This was also stated to take care of the apprehension of the adverse impact of a peaking dam which results in diurnal variations in the downstream flow. The TEC recommended maintenance of continuous flow of 110 cumec (now agreed as 250 cumec) during non-peaking hours by running one unit of the turbines continuously throughout the day at part load consistent with turbine specifications. The TEC had recommended this only as a temporary arrangement observing that “sooner or later a re-regulating barrage will become unavoidable to realise balance in HP generation and to develop the large irrigation potential of the area.....” Apart from this some other options were also suggested. The TEC, in its final recommendations also, had suggested these. However, though it was recommended as a temporary measure, it has been incorporated as a permanent feature. This, as already discussed is also one of the concerns expressed by the Applicant who suggests that the flow should be automatic and maintained without human intervention as the possibility of the turbine being shut off by just a press of a button could not be ruled out.

107. On the matter relating to dam break analysis, it was recommended that “in an environment that is traumatized by floods and is pervaded by



to be adequate by itself to improve the competency of foundation. No evidence is available to show efficacy of the conventional blanket grouting done for dam foundation in improving its competency.

- xii) The performed plunge pool under construction is based on tailor made model studies dimensions of which are subsequently modified at site. The isolated scour pit originally envisaged with the bottom at EI 72.0m. now extends from bank to bank and will be 200 m long with the deepest part at EI 54.0m, which makes excavation of sides impractical without causing slope destabilization.

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- xv) Maintenance of minimum flow is an important issue. In view of the contribution from downstream catchment, minimum continuous release from dam may have to be about 11 cumecs. This flow quantum need has not been established by scientific study of needs of flora/fauna in the d/s. The study currently under way in CWC might account for such assessment and may yield the actual requirement. Technically it is possible to run one unit at 50% part load (about 150 cumecs) continuously. Accordingly to CEA running one unit continuously at full load (320 cumecs) and the consequent reduction in peaking to 1750 MW is in order minimum flow needs, call for considerable reduction in duration of peaking unless actual requirement of EF/MF in much smaller which can be taken care of by seepage across the dam foundation abutments, etc. and d/s contribution without resource to continuous running of one unit at full and part load.

- xvi) Sluice spillway as provided in SLP is in accordance with the best international practice for sediment control. Since the dam will arrest only bed load besides a very small part of suspended load no problem is envisaged on the d/s of dam on account of sediment transport. In reality some retrogression in river levels may be expected leading to lowering of d/s flood levels. Such assessment is yet to be carried out by NHPC.

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- xx) The agitation against SLP and demand for flood control are self contradictory. There cannot be any flood control without a dam. When all the three projects SLP, SMP and SUP are completed considerable flood control would be possible if the operational control of the reservoir is vested in an independent authority like a Subansiri River Basin Authority (SRBA) SIIRMA with appropriate mandate and adequate powers and if flood control objective is not allowed to be diluted further. ....”

(underlining supplied)

109. Some of the steps suggested in the recommendations of the TEC set out under the head “RECOMMENDATION WAY FORWARD”, that are relevant for consideration are as follows :-

Actions for way forward are listed below in order of priority:

- 171.i) An independent dam design review panel and/or CWC shall review the following design features of the dam keeping in view the suspect foundation competency and other apprehensions discussed in the report and the present status of construction:

-Energy Dissipation Arrangement

- Adequacy of a single concrete diaphragm only under sluice blocks
- Non-provision of concrete diaphragm under NoF blocks

The DDRP/CWC shall after a complete/comprehensive review, recommend if considered necessary, design and engineering features to ensure satisfactory performance of the dam. The mandate to DDRP/CWC should be limited to the above to avoid an omnibus review of the project completion may not be delayed.

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- (iii) Pending scientific assessment of needs of flora/fauna. NHPC may undertake to run one unit continuously (24 hrs daily) at full load (250 MW) to ensure a continuous flow of not less than 250-300 cumecs in the river d/s of SLP.

NHPC will however be free to run one unit continuously, as part load corresponding to any smaller/lesser minimum flow which may be decided by CWC/MoEF in due course based on studies currently in progress by CWC/MoEF.

NHPC shall also be free to construct a re-regulating structure on its own or as a joint venture with GoA. As and when that happens, NHPC can revert to peaking operations as envisaged in the DPR.

If the stipulated minimum flow is smaller than that need to run one unit at part load continuously. NHPC shall be free to build/install a correspondingly smaller unit in SLP.

- (vi) GoA have to put in places non-structural flood proofing measures. Incremental costs due to DBA shall be contributed by SLP, SMP and SUP. (underlining supplied)

110. We may observe that while discussing the report of the TEC, we have touched upon only some of its salient features to put in perspective the width and criticality of the issues involved in the case, notwithstanding the various other aspects which by no means are less crucial. From the narration of the stand of the respondents which have been adverted to in detail, particularly that of the Respondents No.3 & 5, i.e., the NHPC and the Govt. of Arunachal Pradesh, respectively, it would appear that all issues flagged by the Applicant, the various authorities and Committees have since been duly addressed and their recommendations accepted and complied with and, therefore, according to them, stalling the project was uncalled for putting the

Government at a loss both on account of huge investment and generation of energy.

111. However, indisputably the matter did not end with the submission of report by the Thatte Committee (TEC). We find that the Thatte Committee also had not considered the project to be beyond reproach as it had raised serious questions on the safety of the dam arising out of the seismological and geological aspects. The very first recommendation of the TEC was for constitution of an "Independent Dam Design Review Panel" DDRP that culminated in the formation of the Dam Design Review Panel" (DDRP). Although the TOR of the DDRP was confined to a limited mandate, it had *inter alia* acknowledged the foundation competency of the dam as being doubtful and that the DDRP was mandated to have a complete/comprehensive review of the dam design and recommend, if considered necessary, design and engineering features to ensure satisfactory performance of the dam avoiding omnibus review of the project which may delay completion of the project.

112. Since some of the critical issues, especially seismic and dam safety aspects and the downstream impact, remained still unresolved, the Ministry of Power (MOP) Govt. of India constituted a "Project Oversight Committee" (POC) in January, 2015 comprising four members from Expert Group of Assam and four Experts from the Govt. of India, one each from CEA, CWC, GSI and IIT, Roorkee. The terms of reference of the POC as per OM No. 2/5/2002-NHPC dated 13.1.2005 were as follows :-

"(i) Review of safety aspect of the dam in the line with the recommendations made by Expert Group and Technical Expert Committee.

(ii) Downstream impact review as recommended by expert Group of Assam and Technical Expert Committee constituted by the Planning Commission.

(iii) The POC may consult any eminent expert individual or organization of national/ international repute.

(iv) The POC shall finalise its report within a period of three months from the date of notification.

(v) The POC would hold its meeting as soon as possible to address the issues and consider early resumption of work on the project.”

113. Thus, the POC was “mandated to review the safety aspects of the dam and downstream impact studies in line with the recommendations made by the Expert Group (EG) and TEC, address the issues and consider early resumption of work on the project” (abstract taken from the report of the POC members recommended by GOI). Undeniably, therefore, the object of constituting the POC was essentially to bring about convergence of the views of the EG and TEC primarily on two aspects of seismology and safety and downstream impact studies of the dam.

114. Ironically, far from the issues being resolved and the views converging, the constituent members of the POC, which was meant to be a single body, was vertically split as they had expressed diametrically opposite views. In fact the differences in opinion were so pronounced that POC members consisting of Experts from Assam, i.e., the EG, and those nominated by the GOI submitted separate reports.

115. The stark differences of opinion and views are quite apparent from the reports of both the groups of the POC from which we find that substantial discussions had taken place in its 12<sup>th</sup> meeting. The differences of opinion are found to be remarkably wide particularly on the question of safety and

suitability of the dam and its design. It would be rather prolix to deal with all the points of difference but, for the sake of appreciating the depth of it, we may reproduce some of the salient aspects of the two reports, which shall follow hereafter.

116. In the abstract of the report of the POC submitted by its nominees of the Govt. of India Constituent, it is found recorded as follows :-

“To a query of Prof. Duarah regarding the maximum considered earthquake as given in the site specific design parameter report of IITR (REF Page-6 ‘It is determined by judgment based on maximum earthquake that a tectonic region can produce by considering the geological evidence on past movement and the recorded seismic history of the area’), Prof Sharma gave the following points considered for estimating the maximum magnitude (Point-13 in the Minutes of 4<sup>th</sup> POC meeting)-

- (a) Maximum observed magnitude
- (b) Geometry of the seismogenic feature
- (c) Geological considerations including paleoseismicity and scarp
- (d) Slip rate
- (e) Gutenberg Richter relationship

However, the report “Site Specific Earthquake Parameters for Subansiri Lower HE Project, Arunachal Pradesh” submitted by IIT Roorkee group in December, 2001 to NHPC did not consider most of the above mentioned points, namely the points (b), (c) and (d). The maximum observed magnitude of earthquake in the region is 8.7 as mentioned in the report, which was not considered in the study. The geometry of the seismogenic feature considered for site specific study was the MBT (Main Boundary Thrust) and the HFT (Foothills Thrust) also known as MFT (Main Frontal Thrust), though it is an active fault, this was not considered in the study. It is to be noted that the Nepal Earthquake of 25 April, 2015 (Magnitude 7.8Mw, focal depth 15km) have occurred in MHT (Main Himalayan Thrust)”

117. The synopsis of the records of proceeding of the 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> meetings reflect the reservation on seismic safety expressed by some of the members and the fact that the POC could not converge on those even after long deliberations. The 5<sup>th</sup> meeting records the fact that “due to lack of time and existing differences between the two groups, the committee members

could not reconcile and, therefore, two separate interim reports were prepared for submission to the Ministry of Power, Govt. of India.” The conclusions in the reports of both the expert groups viz., Assam and that of Govt. of India, clearly reflect the division of opinion. The Expert Group of Assam in their conclusion had expressed the view that NHPC was yet to satisfactorily answer the concerns pertaining to seismic doubts and foundation apprehensions as well as addressing the downstream environment and social concerns and, that resumption of the project work was fraught with seismic and foundation risks in the absence of complete scientific understanding of the dam site on account of the unresolved seismological issue. On the other hand, the experts nominated by the Govt. of India was of the view that the dam design proposed for implementation adequately addressed the challenges posed by the site condition, viz., weak rock, seismicity, high flood, etc. and, therefore, the project construction should not be held up further on account of technical issue especially dam safety.

118. It is recorded that in the 6<sup>th</sup> meeting there was difference of views amongst the committee members on the seismic design parameters adopted for design and that, as the expert group of Assam was not convinced, it was decided to solicit the opinion of few eminent Indian/foreign experts. It has been specifically mentioned that all issues relating to dam foundation were attempted to be resolved on the clarification provided during the meeting but the committee members were of different views. In the 7<sup>th</sup> meeting it was decided to invite Prof. A.K.Goel, IIT, Bombay and Dr. AK.Mahajan, Central University of Himachal Pradesh, for seismic hazards analysis.

119. The 8<sup>th</sup> and 9<sup>th</sup> meetings *inter alia* records the presentation of Prof. Goel and of the POC members having agreed to his assessment of the seismological hazards by using the statistical method and probabilistic method by Dr. A.K.Mahajan.

120. In the abstract of the 10<sup>th</sup> meeting, it is recorded that after going through both the presentations of the two experts, it was observed that seismic design parameters (SDP) as evaluated by them were almost the same that had been approved by NCSDP for SLP. We also find that the expert group of Assam had made certain observations on the seismological report prepared by the experts. It appears that in the 12<sup>th</sup> meeting, the expert group of Assam intimated their decision to withdraw from further attending any POC meeting for reasons of differences of opinion with which we shall deal later.

121. The relevant portions of the extract of the meeting reproduced below would reflect the extent of differences between two groups :-

“ The POC members of Govt. of India are constrained to state that in spite of unanimous decisions taken during 5<sup>th</sup> POC meeting to resolve the issues and prepare an integrated report, the POC members from the Expert Group of Assam decided to submit the report directly to MOP without objectively deliberating report/issues among POC members.

The Govt. of India members tried their best to bring them on board by explaining the details and nuances of the project design, site geology and seismicity etc. Besides, visit to Teesta-V Hydro Power Station in Sikkim, TLD-IV Hydro Electric project in West Bengal and SLP in Arunachal Pradesh/Assam were also undertaken to see the design aspects of the constructed and under construction dams in Himalayas including dam behaviour during recent earthquakes.

In addition, based on their instance external experts were also engaged to revisit doubts on seismic aspects. The findings of their studies corroborated the seismic design parameters approved by NCSDP. However, EG Members of Assam choose not to accept the findings of experts suggested by them ever since the Experts of IIT-B and CUHP submit their reports. POC members from EG of Assam abstained from attending the subsequent deliberations of POC viz. 11 and 12<sup>th</sup> POC meeting....

122. It was ultimately observed that “issues relating to safety aspect of the dam had been resolved and work on the project may be resumed at the earliest. “The peculiar properties of the rock viz. slakiness, makes it necessary that the lining work of the underground tunnel be undertaken immediately. Otherwise, it will have deleterious effect on the structural strength of the tunnel”.

123. We may now consider the report of the members of POC from the Assam consisting of the expert group.

124. Under the head “Background of the Issue related to the Project” under sl. No. 1 of their report, it is stated that the Expert Group (EG) comprising members from various disciplines of Gauhati University, Dibrugarh University and IIT, Gauhati after its constitution in May, 2008 to assess downstream impact of the project, submitted an Interim Report in February, 2009 and the Final Report in June, 2010. In these reports, they had raised issues related to downstream impact as well as on the safety of the project. In their Interim Report, it was recommended that the NHPC should not construct the foundation of the dam before submission of the Final Report as it may contain suggestions for modifications of the project but that the NHPC went ahead with the work at the project site. The submission of report was followed by several meetings between the NHPC and the Expert Group but they could not agree on the points raised which remained unresolved.

125. The House Committee of the Assam Legislative Assembly which considered the recommendations also by and large found to have supported the views of the Expert Group.

126. Later, a joint meeting was convened by the Expert Appraisal Committee (EAC) amongst the Government of Assam, EG and representatives of NHPC on the issues but the differences still could not be resolved.

127. A Joint steering Committee (JSC) constituted by the NHPC as desired by the Govt. of Assam to examine Part II recommendations of the EG's report and to identify feasible measures to take care of possible downstream impact, flood erosion, etc., submitted its report in August, 2012 with certain recommendations.

127. This was then followed by constitution of the Thatte Committee (TEC) which, in its report submitted in July 2012 to the Planning Commission considered, inter alia, formation of an Independent Dam Design Review Panel" and/or CWC to review the design features of the dam, keeping in view the suspected Foundation Competency, unsuitable dissipation Arrangement (EDA) and lack of adequacy of provision of cut-off walls. However, the MoP, instead of constituting a "Independent Dam Design Review Panel", set up a "Dam Design Review Panel" in 2012 which submitted its report in June 2013 proposing modifications in the dam design that were believed to ensure safety of the dam in the long run. Three meetings held on different dates thereafter culminated in the formation of the "Project Oversight committee" (POC) with the terms of reference as already referred to earlier.

129. The report of the POC (Assam Group) being comprehensive and in considerable detail, we shall only indicate below the points of difference highlighted by them :

- a) In their opinion, the seismological and geological issues had not been resolved. The EG was of the view that lithologically, the sand stone rocks in the dam site are weak and poorly cemented. The explanation given by the NHPC, as per them, indicated the level of uncertainties perceived by the NHPC for the project at the DPR level. It has been observed that what was actually adopted by the NHPC was not clear.
- b) It has been observed that the seismological issues were attempted to be discussed during the 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup>, 6<sup>th</sup> and 10<sup>th</sup> meetings of the POC. The POC Assam Group (EG) had expressed surprise at the Govt. of India experts having discussed several important issues on matters relating to the field of geology and hydrology and, in particular seismology, in the 7<sup>th</sup> meeting of the POC with only one member from the expert group of Assam present while the others from the group were absent. The 8<sup>th</sup>, 9<sup>th</sup> and 10<sup>th</sup> meetings of POC *inter alia* dwelt on seismology and geology. That none of the experts engaged by the 7<sup>th</sup> POC meetings had experience in the Eastern Himalaya in terms of geology as well as seismology. Method of study adopted could not be reconciled by the group.

Relevant portions of the observations of the group read as follows :- “..... It is also observed that Prof. Mahajan clubbed the entire range of earthquake magnitude from 6 and above in one

category, which is not correct. These made the entire analysis of Prof. Mahajan for seismic hazard analysis ineffective”.....

“None of the experts (Prof. Mahajan and Prof. Goel) engaged by the 7<sup>th</sup> POC meeting considered 8.5 magnitude earthquake, and if considered, the PGA value will come up to a much higher exceeding 0.5 g as suggested by the Assam Expert Group. It is to be mentioned here that for the Middle Siang (Siyom) project, NCSDP, CWC approved the PGA value for Maximum Credible Earthquake (MCE) horizontal to be 0.45g. Repeated request from the Assam Expert Group members in the POC to make the report available to them is not attended by the Govt. of India members.....”..... “ The inference made by the abovementioned authors is that the Subansiri dam site region is a zone of low seismicity and not due to seismic gap. Under the head “Scope of Work” section, Prof. Mahajan writes, ‘there are lot of uncertainties in the seismic data as mentioned above i.e. continuous data is the first requirement, second is attenuation relation of the region, which is also not available. So in absence of strong motion data from Himalayan region for major or great earthquakes, either NGA relations or other, which is suitable for the region will be used, as decided in the last meeting on 19<sup>th</sup> September. In lieu of the uncertainty, the variation in the PGA values can be possible”.....” In the present analysis, Prof. Mahajan considered earthquakes with magnitude 6 and greater as one category (tables 1 & 2 of the report, Appendix-XVIII) of this report) and all major earthquakes of different

magnitudes' from 6.0 to 8.7 are included. This cannot be considered as proper and uniform class intervals should be made. It is facetious to see that uncertain data of the past have been used in the study from 1554 to 1900 and also by dropping the world known Great shilling Plateau Earthquake of 1897 of magnitude 8.5 with the contention that it was 320 km away from the dam site" ....

130. Regarding Points 2 and 3 i.e., on the geological, tectonic and seismological points of view and re-design of the project, the expert group after deliberating on the various issues, held that points No. 1 and 2 required to be resolved first before proceeding on to point No. 3 as safety issues and risk involved were considered by them to be of primary concern. It is further noted that although all the POC members agreed in principle that the seismic issue was to be reviewed by persons of national and international repute from India and also from abroad and a list of experts, 7 from India and 5 from abroad was drawn up, the Ministry of Power expressed its reservation in engaging foreign experts.

131. Shorn of the details, we may reproduce below the concluding remarks of POC Assam Group (EG) :-

**“ 6.0 Concluding Remarks :** A way ahead for LSHEP is likely only after conclusively answering the seismic doubts and foundation apprehensions, along with convincingly allaying downstream environmental and social concerns. The POC discussions could not provide any new direction since the members representing Government of India refused to accommodate the question of redesign of the project. Clarifications repeatedly sought by Assam EG members of POC on details of seismic calculations have not been responded initially. After the submission of the two Indian seismologists' reports, several new questions arise regarding their studies. Due to this stand despite the current retro-fitting efforts by NHPC, resumption of the project work appears fraught with seismic and

foundation risk in absence of a complete scientific understanding of the site. Therefore, as per unresolved seismological uncertainty is concerned, opinion of experts working in Himalayan seismology and earthquake engineering aspects of hydropower projects exclusive of NCS DP, which is a committee formed by CWC (Central Water commission), preferably from outside the country is felt unavoidable. The claimed improvements in foundation safety attributed to the retro-fitted changes will not be credible as long as not validated by necessary simulations to make them credible. It was observed that improvements were focussed only on the dam alone while the entire project site including the reservoir and areas of possible vulnerability within logical proximity require attention due to the fragile terrain. The retro-fitting steps taken was primarily in connection with energy dissipation measures and not for enhancing foundation strength. The adequacy of the additional structures, e.g., the downstream cut off wall is not clearly established in absence of simulation within these additional features. The POC members felt that NHPC is yet to satisfactorily answer these fundamental concerns including the yet to be proven low sediment sluicing proposed to keep reservoir sedimentation at minimum, thereby bringing no change in the original questions raised” (underlining supplied)

132. We find the analysis of Prof. Mahajan and Prof. Goel and the opinion of POC members from Assam to be widely differing in their reports on the scientific and technological treatment of the seismic source zones. The EG expressed that although the studies of the two experts were based on seismic zones, it was not clear as to how the seismic zones had been delineated and what the reasons were for them to treat the seismic source zone differently. The fact that there had been earthquake of 8.5 magnitude in the Northeast India and that the location of recurrence cannot be predicted, made it imperative for the project to be designed adequately.

133. The POC (Assam Group) observed that while some modifications had been made to the dam structure as proposed by DDRP which was partly implemented, their adequacy as regards safety and seismicity of the dam was doubted and opined that a major risk of uncertainty remained as no

comprehensive evidence existed. It was pointed out that the lack of unanimous decision was primarily due to the fact that the modifications proposed by NHPC had no component of re-design but were only retro fittings to address some of the critical issues only after those had been pointed out. The expert group further went on to point out the following :

“The scientific credibility of the findings of the expert group of Assam has been endorsed and vindicated by the subsequent committees constituted by the government. However, while accepting most of the suggestions connected to shortcomings of the project, it is unclear and rather puzzling as to why the issue of safety of the foundation and general safety of the project has not been given due consideration and continued to be undermined and resisted without any tangible scientific reasoning and evidence of emphatically establish that the critical parameters like the PGA value have been arrived at after due scientific diligence. Since the issue of safety of the project due to seismicity and weak foundation yet remains unresolved, and hence, the question of completing the project in its present design itself is still undecided, the question of discussion of most downstream impact and their possible mitigation is premature. Considering the above, and deliberations in all POC meetings so far, without losing further time, all questions raised on seismic issues (copies of mails attached with this report, Appendices-VII and VIII) should be addressed by Prof M L Sharma (due to this involvement in the seismic study) and others, the methodology, the methodology, tools and data-as had been repeatedly requested-should be made available for early examination by few chosen external experts to be immediately provided by POC and the safety of the whole project (not the dam alone), including that of the foundation and the whole periphery of the reservoir be demonstrated with a comprehensive simulation along with animation under various seismic and hydrological conditions. The POC is equal concerned about continued loss of precious time and wish to move on after resolving these key points concerning EG’s three major points, only after which, TEC, DDRP and downstream environmental issues should be possible to address. Downstream changes are inevitable, what will be the acceptable trade off remains the only issue. Final effectiveness of most of the mitigation efforts often remain uncertain as adequate knowledge can almost never be generated for all downstream implications, mainly due to extreme diurnal variation in flow that make seasonal flow level changes to happen within the day. When a river faces flood extreme (during no power production) within 24 hours, the ecological responses are almost impossible to predict or mitigate. The Assam expert group could not take part in the 7<sup>th</sup> POC meeting, where it was decided to engage only two selected Indian seismological experts and no experts from abroad, for re-evaluating

the seismic design parameters. EG members of Assam were not agreeable to not including Himalayan seismological experts from abroad since this was not as per the collective resolution as reflected in the minutes of the 6<sup>th</sup> meeting, where engaging experts both from India and abroad having credible engagement in the Himalayas was unanimously proposed. The letter issued meanwhile by the MOP asserting that only Indian expert be engaged was not in the correct spirit, which ambiguously interpreted the specific TOR of POC. The EG group members from Assam feels that engaging international seismological experts with knowledge generating experience in Himalayan Seismology was a great opportunity to develop valuable insight on the seismic uncertainty towards resolving the stalemate that should not be missed. Doing so will keep uncertainty and controversy alive forever. It was felt by the POC members of EG that engaging leading experts from abroad could provide opportunities to settle the issue more credibly. Apart from this, the following concerns of EG, Assam members still remained to be addressed: To carry out a comprehensive and complete seismic re-assessment of the design earlier approved by NCSDP. The current exercise examined only parameterization aspect inadequately and that too with many holes. Address the issue of so far not carrying out seismic safety assessment of the abutment and the peripheral areas covering fringe of the reservoir, thereby keeping the aspect of seismic vulnerability of the reservoir unattended, which is a matter of equal concern as that of the dam. If the reservoir rim is composed of equally weak rocks at places, those may as well have vulnerability of breaching or sliding during a major earthquake. This risk may manifest even when arguably the main structure of the dam remains erect. Carry out a comprehensive graphical and animation based simulation of the entire project after incorporation of all the proposed modified features including the modified energy dissipation mechanism, which enter alia is being expected to strengthen the already established and accepted weak foundation. If an animation based simulation under all possible lithological, structural, seismological, meteorological and hydrological conditions can be undertaken to allay the downstream concerns as well. The downstream social and environmental protection aspects, which are yet to be taken up fully, pending settlement of the foundation and seismic safety aspects must be addressed convincingly. The negative downstream impact caused by a concrete gravity dam is quite obvious as seen in case of the Ranganadi dam in the neighbourhood of SLHP, both in terms of environmental damage and intense flooding during monsoon spill over. The fact that the dam is situated in an ecological sensitive and fragile region like the Eastern Himalayas, the relevance of downstream concerns cannot be over emphasized. Due to non-resolution of the safety issues discussed so far, we are unable to carry forward further discussion on this matter. Migration behavior of aquatic fauna being not studied, it's premature to comment on creation of alternative habitats like in-stream pools, constructed wetlands and so on. During the limited discussions on

the downstream impact in the POC, the suggestions made by the Technical Expert Committee (TEC) and Joint Steering Committee (JSC) only appeared to receive priority attention and as such role of POC can at best be termed as that of a mere witness and thus made redundant. The suggestions of Prof. S.P. Biswas, one of the POC members of Assam Expert Group, are enclosed herewith (Appendix-25) The EG POC members also repeatedly raised concerns about the proposed low sediment sluicing mechanism in an effort to keep the reservoir sedimentation at minimum. The havoc played by reservoir sedimentation in almost all Himalayan hydro project reservoirs is well known even within the industrial circle. Yet we are still to establish a foolproof method for this critical aspect that has reduced the life time of almost all Himalayan hydro projects. The low sediment sluicing will also constitute only another experimental attempt to resolving this apparently futile problem that has strongly threatened the sustainability of Himalayan hydro projects. Simultaneously, the havoc to be played by modified and accumulated sediment regime seasonally evacuated from the reservoir will be another physical and environmental hazard to be grappled with, having consequence to both flooding and bank erosion problem. It is high time that the Indian Hydropower sector explores several emerging ecological sound sustainable hydropower technologies that are being strongly advocated and implemented particularly in Europe. As one of the above suggestions raised by the Expert Group of Assam has been implemented so far, the EG members of POC from Assam are finding it futile to be a part of this exercise anymore. We feel that this list of final seismological experts should be selected unanimously by all members together from both within and outside the country and all transactions and decisions must take place through POC and not through NHPC. Unless these precautions are in place, the POC members from Assam feels that their continued association with POC will not serve any further useful purpose and they will not be part of any of the decisions emerging beyond those documented till the 6<sup>th</sup> Meeting. Notwithstanding all above validated concerns, if at all LSHP is completed with no change in design, a comprehensive insurance coverage should be mandatory for compensating people in both upstream and downstream due to any foreseeable or unforeseeable negative consequences of LSHP. We thank all the members of the POC for extending a cordial atmosphere and the MOP for this opportunity. We wish the very best to the future of the project to reach a consensus with all stakeholders for an amicable solution to the stalemate. “

134. Though repetitive, the above, are only some of the observations of the two groups in the POC that clearly demonstrate the degree of difference of opinion between them and, in our considered view, the object of constituting

the Project Oversight Committee (POC) has obviously not been achieved at all.

135. We have taken note of the fact that although the project was granted EC in the year 2003 it is yet to take off because of the issues essentially relating to the safety of the dam in the context of the seismological and geological aspects and downstream impact of the project. The views of the expert group of Assam that is comprised of experts drawn from different Universities in the State of Assam, cannot be brushed aside considering their experience and knowledge of the geological and seismological aspects of the Himalayas and the North East region in particular. Of course, by this it is not being suggested that their opinions should be held to be sacrosanct but only that it deserves to be given due consideration as much as it is accorded to the views of members the POC nominated by the Govt. of India. Accepting the recommendations of only one of the constituents of the POC in the absence of consensus, would be fraught with risk when the opinion and views of the other group in the committee is equally credible. It is not a case of choice of proposals in which case it is trite that it is for the Government to choose one out of the choices. But in the present case, the members of the committee are at issue on the very basis of the proposal accepted by the Government which is in question. The fact that those very questions have not been resolved even after constitution of as many as nine committees and that there were several alterations and/or modifications made in various components of the project in variance with the initial EAC recommendations, is a clear indication that there are serious problems with the project.

136. The strong views expressed by the Expert Group on the seismological, dam design and geological aspects and the downstream impact of the project appear to bear substance considering the number of committees constituted at different times to look into those. It may be argued, as has indeed been urged on behalf of the respondent No. 3, that constitution of such committees would establish that all inadequacies pointed out in respect of the project have been duly addressed and the safety of the dam ensured thereby setting at rest the anxiety and fear of the people. But on the contrary, a survey of the reports of the committees reveals that the issues have remained unresolved and the views of the Expert Group never reconciled. We find the Thatte Committee (TEC) that dealt in considerable detail all the aspects, in its report, had also expressed concern on the seismological, geological, dam safety and downstream impact aspects of the project.

137. The Thatte Committee (TEC) found that the NHPC and EG were not able to reconcile their differences, especially on the seismological aspects and that, while the NHPC was willing to consider the downstream mitigatory measures subject to their technical feasibility and economic viability, they chose to remain firm on the seismological aspects of the dam design although it was observed by the TEC that the NHPC had not reacted to the EG's observations on dam foundation characteristics. The finding of the TEC that the recommendations of EG on the safety of the dam as tending to be ambivalent, appears to be rather incongruous to the details contained in paragraph 29 of its own report on the PGA value worked out by the Expert Group. The TEC also observed that IIT, Roorkee (IIT-R) was found to be using

two equations in tandem in carrying out studies on the site specific SDP (Seismic Design Parameters) for SLP (Subansiri Lower Project) which were actually regression equation developed from a large set of data which did not contain a single Indian event. These and various other reasons led the TEC to conclude that the IIT-R process was subjective and did not give adequately convincing reasons for such selective decision and held that probabilistic assessment could not be side stepped. At the same time, it was observed that the SDP on SLP was not likely to be significantly influenced by either 1897 great Shillong earthquake or 1950 Assam earthquake, a view that was not accepted by the EG. After deliberating on the opinions of various experts and institutions, the TEC acknowledged that seismology is not an exact science and, finally summed up with the observation that the reviews by the experts throw up uncertainty and unpredictability of the ways for determining seismic coefficient for earthquake and that “TEC, therefore considers it prudent to study the behaviour of SLP dam under PGA of 0.5g (MCE) which will enable an informed appreciation of the design of the dam “

138. The object of taking environmental measures is to anticipate, prevent and address the causes of environmental degradation. Lack of scientific certainty cannot be a reason for postponing taking immediate steps and measures to prevent environmental degradation where there is reasonable apprehension of serious or irreversible environmental damage exists. This is what is envisaged in the concept of ‘precautionary principle’. We may aptly quote Prof. Gurdip Singh in his book “Environmental Law” which reads as follows :-

“It is this “precautionary principle” which ensures that a substance or activity posing a threat to the environment is prevented from

adversely affecting it, even if there is no conclusive scientific proof linking that particular substance or activity to the environment damage. The words “substance” and “activity” imply substance or activity introduced as a result of human intervention. They allow the principle to be used in relation to all aspects of environmental degradation, and to extend it to the area of sustainability. As a matter of fact, environmental protection policies must be based on “precautionary principle” in order to achieve sustainable development.....Inadequacies of science is the real basis that has led to the emergence of “precautionary principle”. The principle is based on the theory that it is better to err on the side of caution and prevent environmental harm which may indeed become irreversible. While referring to the causes for the emergence of the “precautionary principle”, Charmian Barton observed: .....there is nothing to prevent decision makers from assessing the record and concluding that there is inadequate information on which to reach a determination. If it is not possible to make a decision with some confidence, then it makes sense to err on the side of caution and prevent activities that may cause serious or irreversible harm. An informed decision can be made at later stage when additional data is available or resources permit further research.”

139. It is no doubt stated on behalf of the respondents that all measures to satisfy the “precautionary principle” have been adopted but, if that had been the case there would have no necessity of the constituting the POC. Even the purpose for which the POC was set up has not been achieved. Accepting recommendations selectively would certainly not end the imbroglio considering the serious questions raised on the reliability of the measures adopted in the project. The facts and circumstances belie the submission made on behalf of the Respondents that although there were differences in the beginning, consensus was arrived at finally.

140. It is to be noted that Hydel Project in question is of the magnitude of 2000 mw and is said to be the largest in the country and, concededly, it is being set up in an extremely fragile eco-sensitive zone. Committees set up to examine the questions raised on the various aspects of the project have been

found to be fragmented and conflicting in their views. Endeavours should be made to reconcile the views to arrive at universally acceptable and safe way forward. The observation of *Charmian Barton* [The Status of the Precautionary Principle in Australia: its emergence in Legislation and as Common Law Doctrine". (1998) 22 Harv Envtl L Rev 547]] (*supra*) that "if it is not possible to make a decision with some confidence, then it makes sense to err on the side of caution and prevent activities that may cause serious or irreversible harm. An informed decision can be made at a later stage when additional data is available or resource permit further research" appear to ring true in this case.

When it is an admitted position that the review of various experts throws up uncertainty and unpredictability of the ways for determining seismological co-efficient for earthquake and that while 0.38g recommended by IIT-R might be based on judiciously selected data, though subjective, the PGA value of 0.5g cannot be side stepped, it would be in the larger interest of the project by following the precautionary principle that the PGA value 0.5g ought to have been taken into consideration by those project proponent. However, this is a matter best left for the experts to decide.

141. In a unique situation as in this case, where constituent members of a single body, i.e., Project Oversight Committee (POC), constituted to resolve the differing views of the EG and NHPC, is diametrically opposed in their views, the object of the POC obviously has not been achieved leaving the entire issues still to be resolved.

142. Before proceeding further, we may also advert to the contention of the Applicant that the project is not a conventional run of the river project. In relation to this, questions have been raised with regard to panic release, the length between the tail race channel and the dam toe being practically run dry due to release of environmental flow of only 6 cumec from the dam as the 250-300 cumec would be released only beyond the tail race. Question also has been raised on the technology and the design of the spillway and on maintaining continuous and uninterrupted sustenance flow without human intervention for the survival of the lives of riparian people and the riverine ecology, more particularly, the Gangetic Dolphins, downstream of the project. The applicant sought to rely on various literature and opinions of different experts on the Run of the River (ROR) Hydel Projects to convince us that the SLHEP project was not such as was being claimed by the Respondents. Case of the Applicant having been dealt with in detail while narrating his case in the earlier part of the judgement, need not be repeated.

143. As referred to earlier, the Applicants placed before us a project report with drawings as an alternative proposal for the project which, if adopted would, according to them, will result in a true run of the river project. As per them, the proposal can be adapted in the present dam design without any substantial alteration except for some reduction in the height of the dam. The project report is stated to have been prepared by Dr. Pradip Kumar Bhuyan, an ex IITian that was endorsed by another expert, Dr. D.N.Buragohain, Emeritus Prof. Of Guwahati University. The proposal, however, was rejected by the respondent No. 3, NHPC, as being illogical and

without any basis. According to them, reduction in the height of dam will result in (i) undoing the flood control mechanism designed at the present height and (ii) that valuable electricity would be lost as a consequence of the reduced height. However, on a careful consideration of the matter, we find that the proposal is deserving of due regard and worth consideration and not a summary rejection which the respondent No. 3 urges us to do. The proposal which is also stated to have been prepared by experts, cannot be just brushed aside with the disdain and ridicule demonstrated by them in the affidavit. Intellectual arrogance in matters such as the one under consideration may lead to disastrous consequences. The Uttarakhand episode is still fresh in our memory. The repeated floods in Assam in the month of August this year and the one in Ranganadi a couple of months before that caused loss of hundreds of lives, both human and animal, and properties, are mother nature's warning and the cataclysmic events only presented mere glimpse of her wrath if we continue to tinker with her injudiciously.

144. Admittedly the project is located in a highly seismic Zone V where precipitation is also heavy. In the event of there being consequences on account of the manifest obduracy, can the losses be indemnified? Life and the environment are undeniably priceless. We are inclined to agree with the Applicants' submission that the MOEF ought to apply the same philosophy and approach to River Brahmaputra and Subansiri as articulated in the affidavit filed by them with reference to Rivers Ganga and Yamuna in the Alaknanda case before the Hon'ble Supreme Court. Considering the serious environmental issues raised in respect of the project and keeping the

attendant sensitivity of the matter, in our view, it would be expedient for project proponent and the Government to be flexible in their approach and keep all options open so that the project can be taken forward in the national interest. We have noticed absolute rigidity and sustained efforts to get only one point of view accepted and that appears to us to be the reason for the project remaining in a limbo thus far.

145. While placing the alternative proposal, it has been submitted on behalf of the applicants that though there would be reduction in the height of the dam which may result in reduction in the capacity of the project, it will however, not only ensure a true run of the river project but, would also take care of all the concerns pertaining to the downstream impact. Notwithstanding the stand of the respondents No. 3 and 5 to the contrary, the potential of the proposal to sustain the environment and the project on the long run certainly appears to be appealing. Keeping in view the principles of sustainable development and inter-generational equity, it would, in our opinion, be worthwhile to examine the proposal and consider its feasibility.

146. The Tribunal, under section 20 of the NGT Act, 2010, is mandated to apply the principles of sustainable development, precautionary principle and polluters pay while passing any order or decision or award. In our view, to overcome the situation as now obtaining, we appropriately would invoke the precautionary principle.

147. For the reasons stated above and the peculiar circumstances obtaining in the case, we direct as follows:

i. The Ministry of Forests, Environment and Climate Change (MOEF & CC) shall constitute a Committee of three expert members who shall be selected from amongst accomplished experts and scientists who may be private individuals or from institutions of repute having undertaken studies on the seismology, geology, hydrology of rivers and river eco-system of the Himalayas and the North Eastern region of the country. The Committee may be a combination of experts from both the categories.

*Provided* that one of such members shall be selected from the North Eastern Region.

ii. The Committee shall be constituted within one month from the date of this order. The Terms of Reference of the Committee shall be the one made to the Project Oversight Committee as contained in OM No. 2/5/2002-NHPC dated 13.1.2005 .

iii. In carrying out their task, the committee may visit the project site and its vicinity, hold meetings with both the constituents groups of POC, i.e., the expert group of Assam and the expert group nominated by the Govt. of India.

iv. The Committee shall hold similar meetings with experts of NHPC and the Applicant or his

representatives. The meetings may either be held separately with each of the groups or jointly with all.

v. The Committee shall technically examine the reports of the various Committees including the ones submitted by both the groups of the POC.

vi. The committee shall also technically examine the alternative proposal submitted by the applicants and consider its feasibility. The Applicant and/or his experts may be permitted to make presentation of their proposal. The Committee may further seek assistance of independent experts on hydel projects.

This shall form an additional Term of the Reference supplemental to the one referred to in direction (iii) above. The Committee shall also be at liberty to obtain views of either national or international experts or both on the subject involving the terms of reference.

vii. Considering the fact that all materials necessary for consideration are available in the records, we direct the committee to submit its report with its recommendations to the MOEF within three months from its constitution.

viii. While considering the TOR, the Committee shall not be influenced by any of the opinions expressed by the earlier Committees. We also make it abundantly clear that the remarks and observations made in the body of

the judgement shall not be construed as expressions of our views on the merits of the case. The Committee shall objectively consider all the aspects, both technical and factual, and arrive at an independent opinion.

- ix. MoEF & CC shall then refer the report and the recommendations of the Committee for stage IV appraisal by the Expert Appraisal Committee under the EIA Notification, 2006.
- x. The EIA shall complete the appraisal within sixty days and place it before the competent authority for final decision.
- xi. The expenditure that would be incurred towards the above exercise inclusive of the professional fees to the Experts, logistic support, etc., shall be borne equally by the Ministry of Power, Government of India, Government of Assam and the Government of Arunachal Pradesh.

148. With the above observations and directions, the O.As and connected MAs stand disposed off.

149. There will be no order as to costs.

**O.A. NO. 109/2017/EZ :**

150. The Applicant in this application is a resident of Borbam Dhilingia village in the Dhemaji district of Assam. He is an Advocate practising in the

Guwahati High Court and a social activist who has been raising social and environmental concerns with regard to the hydro power project in question for over a decade. In the application that was filed on 25.5.2017 he has prayed for the following reliefs :-

- i) To conduct a fresh appraisal of the project as is the condition in the EC;
- ii) To conduct a fresh public consultation as fresh public consultation is pre-requisite for fresh appraisal;
- iii) To place studies before the downstream affected people related to the impact assessment of the project (including in local languages) which were done subsequent to public hearing held on September 4, 2001.
- iv) To conduct fresh public consultation for affected people in the Subansiri valley in Dhemaji district, Lakhimpur district and Majuli district of Assam.

151. The factual matrix of the case leading him to seek the prayers is primarily the structural change in the base of the dam of SLHEP carried out by the project proponent which as per the Applicant cannot be brought without a fresh appraisal and EIA studies being conducted.

152. The respondents have resisted the Application on the preliminary point of limitation substantially on the same grounds taken by them in **OA No. 346/2013/PB/9/EZ** in the matter of **Abhijeet Sharma versus Union of India & Ors.**

153. We have heard the Id. counsel for the parties and perused the pleadings.

154. Mr. Ritwick Dutt, Ld. Counsel for the Applicant submits that the cause of action in this case arose only after the Applicant had received a reply to

an application filed by him under the RTI Act on 9.11.2016 wherefrom he came to learn of there being structural changes made in the project for which no impact assessment studies had been carried out. Therefore, according to him, there being a continuing cause of action, the Application is within time. Reference in this regard has been made to the case of Polavaram Multipurpose Project in Andhra Pradesh wherein MOEF had issued directions in a similar circumstance for conducting fresh public hearing in the State of Chattisgarh and Orissa.

155. Mr. Dutta submits that in the present case EC was granted in 2004 in which one of the conditions was that “in case of change in the scope of the project, project would require a fresh appraisal.” Therefore, following the directions issued in the ***Polavaram Multipurpose Project case (supra)***, in the present case also a fresh appraisal should be conducted. In support of his contentions he has also relied upon the decisions in ***Research Foundation vs UOI & An: (2005) 13 SCC 186, N.D.Joval vs UOI & Ors: 2003(Supp) 3 SCR 152, Appeal No. 23/2011T: Mohana Rao vs UOI***, and the decision of the Himachal Pradesh High Court in ***CWP No. 586 of 2019: Him Parivesh Environment Protection Society & Anr vs State of Himachal Pradesh & Ors.***

156. The respondents in their reply affidavit have denied that there has been any change in the scope of the project and has been carried out in accordance with the object, location, dam height, installed capacity as approved by the MOEF vide EC dated 16.7.2003. However, additional safety measures have been proposed to be put in place on the basis of the recommendations of the expert committees appointed by the Planning Commission, State of Assam and State of Arunachal Pradesh in collaboration

with the NHPC, Ministry of Power, Ministry of Electricity and the Brahmaputra Board. The safety and security of the people of the villages identified by the Applicant have also been taken care of. Therefore, no substantial question relating to environment arises in this OA.

157. While dealing with OA No. 346/2013/PB/9/EZ, we have dealt elaborately on the questions raised in this Application. The structural changes to the project alleged by the Applicant were carried out by the project proponent on the recommendation of the Dam Design Review Panel (DDRP) which had been set up on the suggestion of the Thatte Committee (TEC). As the Thatte Committee was unable to resolve the differences in the views of the NHPC and the Expert Group (EG) which was the purpose for which it had been set up, a Project Oversight Committee (POC) was again constituted essentially for the same purpose. However, even the POC was unsuccessful in achieving its object as the members were equally divided in their opinion. Considering this, the Tribunal, after a detailed finding, has directed the Ministry of Environment and Forest & Climate Change to constitute an Expert Committee the Terms of Reference for which shall be the same as the one referred to the POC with an additional one.

158. Keeping in view the fact that the terms of reference of the POC would bring within its ambit questions raised by the Applicant which involve the entire gamut of the issues pertaining to the seismological, dam design and downstream impact, it would be redundant for us to consider the reliefs sought for in this case. The matter relating on the dam design would naturally bring within its ambit the modified width of the dam incorporated on the recommendation of the Dam Design Review Panel which has been

questioned by the Expert Group as being only structural retro-fitting and this by implication would also cover the subject matter of this application. In our considered opinion, therefore, the decision in OA 346/2013/PB/9/EZ will also be applicable in this.

159. For the aforesaid reasons **both the OAs along with connected MAs thus stand disposed of.**

160. No order as to costs.



सत्यमेव जयते

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Mr. Justice S.P. Wangdi , JM

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Prof.(Dr.) P.C. Mishra , EM

Kolkata,  
Dated: October 16, 2017.

NGT