

**Audit Report:** Joint-Audit Report on “Performance Audit of Punatsangchhu Hydroelectric Project Authority-I”  
**Schedule of Audit:** Nov 2015 to Feb 2016  
**Date of Issue:** 22nd July 2016  
**Period covered by Audit:** Detailed Project Report (DPR) preparation stage till 31st March 2015  
**Name of Agency:** Punatsangchhu Hydroelectric Project Authority-I”

No.	Recommendation	Action taken (as per the detailed action plan/report submitted).	Status/Progress of corrective actions taken by the audited agency	Reasons for non- completion of action on any recommendations
1	<p><b>1. There should be clear policy guidelines on Fund Management</b></p> <p><i>Budget needs to be prepared considering the actual requirement of fund to avoid accumulation of unspent funds and to minimize the interest burden during construction. Further, such accrual of avoidable interest during the construction stage will have impact on the final project cost, 60 per cent of which is debt with a 10 per cent rate of interest during the repayment stage. The fund flow of the project does not end with the completion of the project, i.e. when the authority hands over the project to the RGoB, but repayment of the debt fall on the entity taking over the project from the Authority. (Para 1.1)</i></p> <p><i>Currently, only the DPR suggests a Fund Flow model, which is not adopted. Therefore, the Project Authority should develop a fund management guideline with a clear model of Fund flow and treatment of funds. A definite interest rate on IDC needs to be agreed upon as well. Fund requirements and requisitions should be prepared on a realistic basis to avoid accumulation of idle fund and minimize interest burden.</i></p>	<p><i>The Budget Estimate of the Project is being prepared as per requirement of funds to achieve the target of annual works programme. Requirement of the funds for the Quarter is being placed to the GoI in accordance with the programme and progress of the construction. However, funds balance in Quarter ending the financial year, is being kept to meet the expenditure of 1<sup>st</sup> Quarter of next financial year, so that progress of the project work may not suffer for want of fund flow.</i></p> <p><i>Reviews have been made at the time of preparation of Revised Budget Estimate for 2016-17 &amp; BE for 2017-18 on realistic basis to avoid accumulation of fund at the close of the financial year.</i></p>	<p><b><u>Partially implemented</u></b></p> <p><i>The management has reported on initiation of actions for preparations of realistic budget estimates.</i></p> <p><i>Fund management guideline with a clear model of Fund flow and treatment of funds not developed for effective management of funds.</i></p>	

<p>2</p>	<p><b>2. Detailed Project Report should be more realistic</b></p> <p><i>Deviations and changes are likely to occur in the execution of such mega hydro power project mainly due to adverse geological conditions in the Himalayan terrain wherein the detailed geo-physical study is rendered difficult unless adequate time frame and resources are provided for detailed geo-physical study. However, due to lack of adequate time period provided to the consultant (2 years) DPR prepared by the Consultant was not accurate and of the quality necessary for such a mega project. Inaccurate DPR coupled with improper decision of both the Consultant and the Management lead to major changes and deviations during execution of the project thereby resulting in huge cost and time-overrun. This has been the recurring scenario in all mega Hydro Power Projects implemented in Bhutan. It is also one of the issues/contentions of the project that deviations/extra items and changes are only because of unrealistic DPR. (Para 1.2.1 and 1.2.2)</i></p> <p><i>Therefore, it is recommended that adequate time and resources for the preparation of DPR should be provided to the Consultant in future projects. Since accurate and realistic DPR would mean implementation of project activities with greater degree of certainty with minimal geological surprises and changes in design during execution, it would be prudent to allocate more time and funds from preparation of the DPR. This is likely to minimize the incidences of huge time and cost overruns that we have been witnessing as a recurring feature in the hydro power projects. The</i></p>	<p><i>WAPCOS has prepared DPR in association with all apex bodies of Government of India and was cleared by CWC, GSI and CEA. Modification and Deviation during execution stage of such Mega Power Project are unavoidable due to unpredictable and adverse geological condition in the fragile Himalayan geology/terrain.</i></p> <p><i>As per the term of reference stipulated by RGoB from submergence point of view the installed capacity was kept at 1,095 MW with a design consideration of FRL 1,180 MW. The changes in scope of the project has occurred due to relocation of dam site (about 1.4 km upstream of DPR dam site). Along with revised FRL (from EL 1180m in the DPR to EL 1202m). The revision of FRL subsequent to the DPR was carried out due to the acceptance of higher value of FRL 1202 m by RGoB, which was earlier not considered desirable by them from submergence point of view. The relocation of dam site along with increase in FRL resulted in increased capacity of the project (from 1095 MW as DPR to 1200 MW) with increase in energy generation.</i></p> <p><i>Due to increase in FRL coupled with the need of reducing the dam height changes in the dam site was acceptable. The location of various component such as coffer dam, diversion tunnels intake tunnels, desilting chambers etc. have also changed. Due to this change in scope, length of water conductor system (Head Race Tunnel) has also increased. The above changes were carried out during preconstruction stage.</i></p>	<p><b><u>Not implemented</u></b></p> <p><i>Any concrete steps taken on the observation have not been intimated.</i></p>	<p><i>As the project has already been started, the preparation of realistic DPR is not possible but to minimize major geological surprises during construction, DPR should be prepared after detailed and adequate investigations in future projects.</i></p>
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<p><i>benefits from saving on account of cost of additional investment in DPR are likely to far outweigh the additional cost for preparation of accurate and reliable DPR.</i></p>	<p><i>For information of the Auditors, the reason for cost escalation from the original DPR is as under:</i></p> <ol style="list-style-type: none"> <li><i>1. Relocation of Dam Axis and increased in installed capacity from 1095 MW to 1200MW</i> <ul style="list-style-type: none"> <li><i>• As proposed by PHPA and recommendation by the TCC on 24.06.2008, a new Dam site was selected as follows:</i> <ul style="list-style-type: none"> <li><i>✓ Location 1.4 km upstream of DPR axis</i></li> <li><i>✓ Installed Capacity 1200 MW with additional power generation of 6% to 7%</i></li> <li><i>✓ FRL 1202</i></li> <li><i>✓ Construction would be easier at New Site</i></li> <li><i>✓ Additional Cost would be involved on account of 1.4 km extra length of HRT, additional height of surge shaft, provision of Butterfly Valve arrangements and modification to pressure shaft liners</i></li> </ul> </li> <li><i>• The RGoB approved revision of FRL from 1180m to 1202m, which was involved additional submergence on 01.07.2008.</i></li> <li><i>• PHPA approved relocation of Dam and revision of Station Capacity in its 3<sup>rd</sup> and 4<sup>th</sup> Meetings held on 08.08.2008 and 26.12.2008.</i></li> <li><i>• Cost implication – Rs. 1940 crores (approx.).</i></li> </ul> </li> <li><i>1. Increase in Diversion Flood from 1960 cumec to 2430 cumec and consequent increase in height of Cofferdam and Diameter of Diversion Tunnel due to unprecedented floods in monsoon of 2009 caused AILA storm.</i> <ul style="list-style-type: none"> <li><i>• Decision taken in the Second TCC Meeting held on 20.07.2009 at New Delhi</i> <ul style="list-style-type: none"> <li><i>✓ Adopting diversion flood as 2690 Cumecs would necessitate following</i></li> </ul> </li> </ul> </li> </ol>		
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		<p><i>changes in the size of the diversion arrangement structures.</i></p> <ul style="list-style-type: none"> <li>- <i>Increase in height of the upstream coffer from 23 to 29 m</i></li> <li>- <i>Increase in height of the downstream coffer dam from 12 to 15m</i></li> <li>- <i>Increase in the dia of diversion tunnel (2nos) from 10m to 12 m in about 950 m height</i></li> </ul> <ul style="list-style-type: none"> <li>• <i>TCC in the 3<sup>rd</sup> Meeting held on 21.08.2009 approved adoption of diameter of Diversion Tunnel as 11.0 m for a diversion flood of 2430 cumecs and subsequently approved by PHPA-I.</i></li> <li>• <i>Cost Implication of – Rs.480 crores (approx.).</i></li> </ul> <p><i>2. Changes in type of Main Dam, Cofferdam and Seepage Control Wall</i></p> <ul style="list-style-type: none"> <li>• <i>It was assessed that implementation of the revised river diversion agreements, implementation delays. In order to retrieve the loss of time, the following measures were considered:</i></li> </ul> <ul style="list-style-type: none"> <li>✓ <i>Main Dam changes from conventional Concrete Gravity to Roller Compacted Concrete for the 75m deep foundation up to river bed level. This was expected to retrieve a period of 12 months.</i></li> <li>✓ <i>Cofferdam change in type of Upstream Cofferdam from Rockfill/Clay core to Composite Colocrete/ Rock fill.</i></li> </ul>		
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3	<p><b>3. Decisions for major changes should be based on comprehensive study, analysis and reports and recommendations of experts</b></p> <p><i>One of the reasons for delay in the completion of project with resultant cost &amp; time overrun was relocation of the Dam to the new site from the DPR axis. The decision for relocation of Dam was taken without comprehensive analysis of the investigation reports of various experts and works were carried out without undertaking remedial measures as recommended by the experts. The shifting of dam without adhering to the experts reports and recommendations has contributed to execution of huge extra/additional work, change in the design of some of the items of works (for instance: the change of concrete dam to RCC) resulting to considerable delay in the completion of project. Delays in completion of Dam not only affected the progress and cost of the work but affected other works as the different package works were interdependent. Delay in the completion of project also contributes to huge revenue loss for the said period. (Para 1.2.1 and 1.2.4)</i></p>	<p><i>It is to inform that decision for all major changes are made after due diligence/consideration and subsequent approval of the authority.</i></p>	<p><b><u>Not implemented</u></b></p> <p><i>No concrete justifications for such major changes have been furnished to audit thereby resulting in changes made without consideration of study, analysis and reports and recommendations of experts.</i></p> <p><i>Matter not justified adequately.</i></p> <p><i>No future course of actions regarding the issues mentioned.</i></p>	<p><i>The major changes has already been done and the work executed at site.</i></p>

	<p><i>The consultant, management and experts should, therefore, consider all reports issued and relevant studies made before taking decisions for any changes, in addition to amending or upgrading provisions of DPR, carrying out further investigations etc.</i></p>			
4	<p><b>4. Bill of Quantities and analysis of rates should be more accurate &amp; realistic and Timely</b></p> <p><i>One of the factors contributing to the huge cost overrun of the projects was payment of extra/deviated/additional items of work at the analyzed rate due to unrealistic DPR and Bill of Quantities. Many of the works were also carried out without finalizing drawings/designs or without proper consideration/execution of geological investigations reports, thereby entailing these works as extra/additional items and paid at analyzed rate. For instance, the cost overrun in MC-3 package itself was Nu. 1,211.60 million. (Para 1.2.3 and 1.2.5)</i></p> <p><i>The analyses of rates are mainly based on the CWC Guidelines (1997) and River Valley Project Guidelines, as no guidelines are available in Bhutan for hydropower works. These guidelines were not adhered to properly thereby paying higher amount to the contractor. For instance, the contractor has been paid more because of unrealistic analysis of rates is in the payment of contractor’s overhead and profit. As per the guideline, the contractor overhead and profit is fixed at 20 per cent whereas the contractor has been paid at 25 per cent profit and overhead cost</i></p>	<p><i>Extra deviated/additional items of work are due to geological condition and site condition and these are dealt as per the contract agreement.</i></p> <p><i>Regarding analysis of rate and contractors overhead and 25% profit was considered by Project Authority based on the earlier executed project i.e. TALA hydro Power Project.</i></p> <p><i>The deviation has been paid as per the Contract Agreement.</i></p>	<p><b><u>Not implemented:</u></b></p> <p><i>The management although asserts that the payments were made based on the earlier executed project i.e. TALA Hydro Power Project, it is in deviation to the guidelines for River Valley Projects.</i></p> <p><i>No actions mentioned on the excess payments made to the contractors.</i></p>	<p><i>Bill of Quantities already prepared and implemented in line with the DPR.</i></p> <p><i>No changes were ratified thereby payment made as per the contract document.</i></p>

	<p><i>thereby resulting in payment of extra 5 per cent, which comes to huge amount. This has also been a recurring feature in the mega hydro projects as bill of quantities are usually heavily understated and contract agreements provide scope for huge additional financial benefits to the contractors in the form of payments at analysed rate for extra/ deviated /additional items of work. Moreover, contractors were also paid for the negative deviations. The audit strongly believes that the Project management and Authority have not considered these aspects appropriately to protect the interest of the Government. (Para 2.4.1, 2.4.3 and 2.4.5)</i></p> <p><i>Therefore, besides preparing realistic DPR, the BoQ should also be prepared in line with the DPR so that changes and variations could be minimized during the execution/construction stage. The analysis of rates should be based on the above guidelines for the future projects so as to avoid payment of huge amount to the contractors and simultaneously resulting in cost overrun. Timely formulation of plans and drawings also needs to be prioritized as well.</i></p>			
5	<p><b>5. Revised Cost Estimate could be more accurate and realistic</b></p> <p><i>The same consultants prepared both the DPR and RCE for the project. Test check of the revised cost estimate (2013 price level) of PHPA-I had revealed equipment cost not required and erroneous exhibition under the infrastructure works, which had inflated the RCE by around Nu. 170 million. This should be reviewed and accordingly corrected in the</i></p>	<p><i>Review have been made and necessary correction shall be made accordingly. It is also to assure that the expenditure which is not required is avoided and there is no impact of escalation on the nature of work as pointed out.</i></p>	<p><b><u>Not implemented</u></b></p> <p><i>Actions taken if any have not been intimated to RAA.</i></p>	



	<p>RCE so that the cost escalations are not further inflated. (Para 2.5)</p> <p>Revised cost estimate could be prepared more accurately and realistically given the experience gained over time and availability of real-time data.</p>			
6	<p><b>6. Management should prioritize synchronization of packages and works</b></p> <p>Delays in execution of different works have occurred ranging from 3 to 8 years as indicated in the report. Delay in one work not only has time and financial implication in the said work but also has similar ripple effects to other works. The total project is divided into different works and contracted out separately for simultaneous completion of all works to complete the project in a given time frame. eg. the commissioning of the Electro Mechanical (EM) packages depends on commissioning of all civil packages. In the project, since the civil packages are delayed and EM packages are already completed, around Nu. 500 million might be payable to EM contractors as overrun charges till May 2019 (projected finish date).</p> <p>Further, experience in a past project (THPA) indicated non-synchronization of various aspects of project operations pertaining to such interrelated works i.e. project relieve contractors, whose work is completed before the rest, of their liability obligations with regard to testing and handing over of work; which can be done only when all interrelated works are completed. Prompt action should be taken to complete the project within due</p>	<p>It is informed that synchronization of various packages identified for the Project (Civil &amp; Electro-Mechanical) is done in order to complete the works within stipulated time frame of the project. After award of the Civil Works, main Electro-Mechanical Package comprising Generating Units &amp; Associated Equipment is awarded and completion time is kept matching with the completion of Civil Works. Subsequently, the other Electro-Mechanical Packages, which have less manufacturing, delivery &amp; erection time as compared to Generating Units, are awarded. Accordingly, five main Electro-Mechanical Packages (MEM-1 to 5) have been awarded till November, 2013. However, keeping in view the revised schedule of completion of Dam (MC-1 Package) due to slide on the right bank, the award of work of balance three packages (MEM-6 to 8) has been deferred and shall be awarded matching with the revised completion schedule of the project.</p> <p>It is further informed that EM packages already awarded are not complete yet as the delivery of material of all the packages is yet to be completed. The provision of overrun charges exists only in MEM-1 package and the same shall be payable only if the delays are attributable to PHPA-I for which detailed delay analysis shall be carried out</p>	<p><b><u>Partially Implemented</u></b></p> <p>Final action taken by the project authority on the issues highlighted is awaited and will be verified after the completion of the EM-I package and the Dam Package.</p>	

	<p>time to avoid increase in cost of power, reduction in Internal Rate of Return and revenue loss in generation/ clean development mechanism. (Para 2.6 and 2.7)</p>	<p>after completion of the works. In case, the delay is due to the other contractor for completion of Electro-Mechanical Works, he should be held liable as per provisions of the contract.</p> <p>All the efforts are being made to complete the balance works within the revised time frame and synchronization of works is being done in this regard.</p>		
7	<p><b>7. Notice Inviting Tender (NIT) should be framed considering appropriate Provisions</b></p> <p><b>7.1</b> NITs should be framed taking into account appropriate provisions for price escalation as well as recovery for use of materials of lower specification.(Para 1.2.6.1 and 1.2.6.3)</p> <p>7.2 Contract/ NIT provisions should be adhered to avoid cost overrun and similar provisions should be incorporated in all similar packages (Para 2.4.4, 1.2.6.2 and 2.3).</p>	<p>The recommendation of Joint Audit regarding certain clauses/provisions for price escalation as well as recovery for use of material of lower specification will be considered during preparation of NITs of any balance work of major magnitude.</p>	<p><b><u>Not implemented:</u></b></p> <p>The actions taken if any on the issue has not been communicated to RAA</p>	
8	<p><b>8. Provident Fund issues should be addressed:</b></p> <p>The audit noted issues related to Provident Fund (PF) of employees of the contractors reimbursed by the Project Authority; PF component is included in the value of work done. Cases of over/excess payment of PF component to the contractors were noted as a result of not ensuring that reimbursement to the contractors are made on actual figures(Para 2.4.5 and 3.4). The management should recovery the over/excess</p>	<p>As per CWC guide line &amp; Clause 52 of Document-IV of Contract Agreement 80 &amp; 55 percent of wages have been included in the rate analyses indirect labour cost, which also includes 8.35 percent of PF components against 5% paid by the Contracting Agencies. The reply submitted by PHPA-I has not been receipted by the Audit with the remarks that "<u>reply is not tenable since as per clause 52 (ii) of the Contract, actual cost was to be considered during analyzing rate of extra/deviated items</u>".</p>	<p><b><u>Partially Implemented</u></b></p> <p>The deduction and payment of provident fund for the labourers by the contractor in many of the contract packages has been made starting from the year 2011.</p>	

payments from the contractors and ensure correct reimbursement to the contractors in future.

The actual indirect wages in Bhutan (as per RGoB rules) work out to be 86% & 81% against 80% & 55% considered in rate analysis as per details below:

Sl. No.	Items	Category	
		Skilled	Semi-skilled & unskilled
<b>As per CWC Norms</b>			
1	Paid Holidays	5 days	5 days
2	Weekly day rest	52 days (Included in the wage)	52 days (Included in the wages)
3	Earned leave	30 days/year	
4	Sick leave	10 days/year	-
	Casual leave		
	Paternity leave		
	<b>Sub-Total</b>	<b>45 days</b>	<b>5 days</b>
	<b>% of direct wages</b>	<b>16.79%</b> <b>(45/268)</b>	<b>1.62%</b> <b>(5/308)</b>
5	Retrenchment compensation	5.59% (15/268)	4.87% (15/308)
6	Accommodation, Water Supply, Sanitation, Power	23%	18%
7	Medical Expenses	4%	4%
8	Workmen's compensation	5%	5%
9	Canteen Facility	2%	2%
10	Free dress, Gumboot etc.	3%	3T
11	Travelling Expenses	6%	6%
12	Gratuity	5.59% (15 days/268)	-
13	Employees Provident Fund	8.33%	8.33%
	<b>Total</b>	<b>79.3</b>	<b>52.82%</b>
	<b>Say</b>	<b>80%</b>	<b>55%</b>

However, the management had not commented on excess payments recoverable as reported under audit findings.

Instead of paying 86% & 81% actual indirect Labour wages PHPA-I paid 80% & 55% indirect Labour wages as per Contract Agreement, which is on lower side.

**B. Lack of supervision on provident fund deposit (para 3.4):-**

Following are the provisions as per 'Regulation on working condition-2012 (Deptt. of Labour

		<p><i>Ministry of Labour &amp; Human Resources, Bhutan) Page 45-49</i></p> <p><b><i>Regulation: Provident Fund</i></b></p> <p><i>Chapter-1: Preliminary</i></p> <p><i>3. This regulation shall come into force with effect from November 11, 2009</i></p> <p><i>Chapter -3: Participation in the scheme</i></p> <p><i>8. An employee who has completed the probation period as indicated in the contract of employment shall be entitled to participate in the provident fund scheme.</i></p> <p><i>9. The contribution of both the employer and employee shall commence from the first pay period after the completion of the probation period.</i></p> <p><i>10. The number of years of participation in the scheme shall be calculated from the completion of the probation period. Chapter-4: Entitlements Less than 5 years of service</i></p> <p><i>20. An employee with less than 5 years participation in the provident fund scheme irrespective of the annual period of participation shall be entitled to receive the amount of his or her provident fund contributions plus interest credited on those contributions but shall not be entitled to receive any portion of the employer's contribution over that period. The employer shall have the right to claim from the financial</i></p>	
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		<p><i>institution for his portion of the contribution with interest accrued.</i></p> <p><b>Clarifications on late start of the PF contribution by M/s L&amp;T Ltd.:</b></p> <p><i>The PF scheme was not in force to the Contractors from April, 2009 &amp; Contracting Agency for Package MC-1 was in continuous discussion with Department of Labour Ministry of Labour and Human Resources Bhutan for clarity of PF scheme since April, 2009.</i></p> <p><i>The Contracting Agency for Package MC-1 has informed that probation period is normally 12 months from joining date of employee in case of workmen. As such, the PF was applicable from Nov, 2010 as per the Chapter-3. However, due to high attrition rate of workmen, the Contractor Agency was not able to finalize the PF account and decided to start from the 1<sup>st</sup> month of financial year 2011 for uniformity.</i></p> <p><i>Schedule of completion of project as per agreement was 66 months and the employment including probation period not exceeding the 5 years service period. So, the Contracting Agency was reviewing the applicability of the employer contribution part and started the same from April, 2011.</i></p> <p><i>During the intervening period that is from April 2009 to March 2011 the Contracting Agency did not deduct PF contribution from employees.</i></p>		
	<p><b>9. Environmental and ecological initiatives should be accorded more attention</b></p>	<p><i>The conservation of the critically endangered WBH in the Punatsangchhu basin is accorded top</i></p>	<p><b><u>Partially implemented</u></b></p>	

9.1.	9.1 White bellied Heron conservation project should be completed timely	<p>priority by the PHPA. PHPA has provided a fund of Nu. 2.0 million to RSPN for the world's first successful captive breeding exercise of the WBH, Bumitsawa, Punakha.</p> <p>PHPA-I stands committed to provide both the technical and financial support as per the Approved Revised Cost Estimate of the July 2015 (PL Dec. 2013) of PHPA-I, to bring to fruition the establishment of the WBH conservation facility at Chanchey, Tsirang Dzongkhag.</p>	The management indicated that the works are under progress. The actual outcome of the project needed to be verified.	
9.2.	9.2 Afforestation initiative should be prioritized	<p>The budget proposed for compensatory afforestation in the sanctioned DPR 2007 was Nu. 18.22 million. As per the approved RCE of July 2015 (PL Dec. 2013), the approval for compensatory afforestation is Nu. 28.30 million (55% more than initial proposal). The expenditure incurred till date for this activity is Nu. 24.05 million.</p> <p>The area for compensatory afforestation considering the DPR 2011's provision to afforest Equivalent area of affected land is 561.14 Ha. However, since the Forest &amp; Nature Conservation Act of Bhutan, 1995 does not stipulate guidelines for compensatory afforestation, the norms of the Indian Forestry Conservation Act, 1980 is being used which states that "if non-forest land is not available, compensatory plantations are to be established on degraded forest lands, which must be twice the forest area affected or lost".</p>	<p><b><u>Partially implemented</u></b></p> <p>The afforestation work has already been given to the various Dzongkhag Forest Offices and budget also appropriated.</p> <p>However, the actual work of afforestation i.e. twice the forest area affected or lost can be verified upon the completion of the whole afforestation and compensatory work.</p>	
10	<b>10. Agreement with WAPCOS should be reviewed</b>		<b><u>Not Implemented:</u></b>	The agreement was endorsed and

	<p><i>Timely review of the agreement with WAPCOS and that of, the project consultant is important given the inadequate and inconsistent provisions noted by the audit. Optional arrangements should be avoided to minimized extra expenditures and penal clauses should be incorporated to ensure prompt service delivery (Para 3.5.1).</i></p>	<p><i>The Draft Agreement between PHPA and WAPCOS Ltd. for Consultancy Service was placed in 3rd PHPA meeting as item no. 3.11 held on 8th August 2008 for obtaining approval and decision whether the provision for LD in case of delays would be required to be incorporated. In the 4th PHPA Meeting held on 26.12.2008, item no. 4.2, it was decided by the Authority that “the provision of LD should not be incorporated in Consultancy Agreement.” (Annex-I)</i></p>	<p><i>The response given by the management is not in consonance with the recommendation and the para referred to.</i></p>	<p><i>approved by the PHPA Authority without any provision of Liquidated Damages in case of delays.</i></p>
11	<p><b>11. Monitoring and Supervision initiatives should be strengthened</b></p> <p><i>Execution of works in deviation of specification, discounting statutory liabilities of the contractors, over/excess payments to consultants and contractors, cases of non-adherence to conditions of operation and other lapses, indicate lack of adequate monitoring and supervision mechanism in the project (Para 3.1, 3.2, 3.3, 3.4 and 3.5).</i></p> <p><i>Proper monitoring and supervision should be put in place to ensure efficient execution of responsibilities by the consultants and contractors. Further, adequate supervision is essential for ensuring compliance to prevalent regulations and smooth progress and timely completion of contracts.</i></p>	<p><i>Recommendation of the Joint Audit regarding proper monitoring and supervision to ensure efficient execution of works is being followed in respect of different packages. It is also to apprise that contractors/working agencies have deployed technical personnel/manpower according to the works programme. Adequate attention is being taken for compliance to prevalent regulation and smooth progress of work. Works of different packages are being executed as per the terms of the contract /agreement.</i></p>	<p><b><u>Partially implemented</u></b></p> <p><i>The compliance needs to be validated through documentation and site visits which has not been conducted.</i></p>	
12	<p><b>12. Possibility of developing standard specifications and analysis of rates independently for the Hydropower projects in Bhutan should be explored</b></p> <p><i>All hydro power projects funded through GoI financing follow specifications, guidelines and</i></p>	<p><i>The recommendation for applicability of Indian Standard rates and guidelines in Bhutan shall have to be looked into by a duly authorised committee of Experts from RGoB &amp; GoI for adoption in future Hydroelectric Project in Bhutan.</i></p>	<p><b><u>Not implemented:</u></b></p> <p><i>Actions taken, if any, apart from the response is not intimated.</i></p>	<p><i>The construction of Hydropower projects in Bhutan has been following the same guidelines, standards,</i></p>

<p><i>schedules of rates developed for power projects in India; some of which may not be relevant or may be impracticable and inappropriate for implementation in Bhutan or even too complex for conditions and situations in Bhutan. Moreover, these are developed for application within India and may need appropriate modifications and changes to incorporate and adapt to the local requirement and conditions.</i></p> <p><i>It may, therefore, be necessary to review the relevance and applicability of Indian standards, rates and guidelines in Bhutan for appropriate modification to suit the Bhutanese requirements and conditions.</i></p>			<p><i>specifications and rates from the CWC guidelines.</i></p> <p><i>No guidelines for construction of hydropower has been developed in country as of now.</i></p>
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