The L&D wing of NTPC are in urgent need of following two requirements which we would like to explore implementing under MoU:

1. Creating a bench-strength of NTPC employees who can utilise the power of Data Science, AI & ML for the benefit of NTPC.

To provide on-line training on Data Science, AI & ML for a batch of about 50 employees over a period of twelve months, followed by three months of support in getting these employees to implement the project work using these advanced technologies at their workplace. The on-line sessions are to be held after office hours or on weekends, so that their regular work is not affected. NTPC will have the right to decide the platform for the live sessions and record to use the lectures for it's use in the future. The employee should also be provided with a tutor support, who will be able to answer his / her doubts over phone / web meeting on mutually agreed times. The employee should have access to e-Learning modules on the topics that are to be covered, so that the employee can go through and come prepared for the live on-line sessions, and can refer back to the content after the live on-line sessions. The employee will have to give an online exam once in a month, for the topics covered in the month. There should be an option for the employee to choose between two offered dates to give his / her exam. The employee should have the option to appear for one of the exam or both the exams and the best of both exams will be considered for the final score. The employee should be asked to attend a one-week boot-camp at the institute or PMI, once in a quarter, to physically interact with the tutors /professors and peers, for networking, ideation and summarising the learnings of the quarter.

The project work that the employee will be implementing has to be decided in consultation with his / her tutor with in the first six months. While it will be the responsibility of the employee to take the approvals for implementing the proposed projects from their respective HOPs, the tutor from the institute will support in deciding the project with respect to assessing feasibility, required resources etc. The tutor for each of the employee will be expected to travel to the NTPC station, if felt necessary, once or twice during the three months' project implementation stage after the end of twelve months course to support the employee in implementing the project. The travel expenditure for the above, for the tutor will be reimbursed to the Institute by NTPC upon submission of original bills and the stay at NTPC station will be free of charge.

The institute is allowed to engage any third party vendor for any support in execution of the above proposal, but the responsibility of delivery will be with the institute. .Further terms and conditions an be agreed upon mutually between NTPC PMI & the Institute. The institute will support in short listing the 50 employees among all interested employees, through on=line exam, project proposal, statement of purpose etc. NTPC would like to start the batch from 5th September 2020.The payments to the institute are to be linked to milestones and performance of the employees with at least 30% linked to successful implementation of the project work at the employees' workplace at the end of 15 months.

You are requested to provide us with a budgetary offer on a per employee basis along with the minimum and maximum number of employees per batch before 15th July 2020. Based on the success of the first batch, NTPC will consider providing the training for a few more batches.

2. Creating AI driven Cloud Based On-Line Power Plant Simulators.

NTPC has been providing training to it's employees through High Fidelity On- Premise Simulators on operation of power plants, through simulators provided by OEMs, like Yokogawa, Emerson etc. The employee has to leave his / her workplace to go the stations which have these simulators to get trained on the Simulator for a period of one or two weeks. He / She gets this opportunity once in three or four years.

With the advancements in technologies like cloud computing, AI & ML, it should be technically possible to develop an on-line simulator which can be accessed by our employees from his / her workplace through internet. The role of the instructor of the simulator should be played by and AI driven Intelligent Tutor, which will guide the employee on the steps required for operations of the power plant in the Mentor mode. The AI driven Intelligent Tutor should also teach the employee the logic / physics behind the permissive, protections and interlocks of the equipment. The level of guidance provided by the AI driven Intelligent Tutor, should vary depending on the expertise level of the employee. The simulator should be capable of running on individual mode and group mode. In the individual mode one employee will be running the whole unit. In the group mode a group of employees sitting across various geographical locations should be able to run or control one unit. Similarly, the simulator should be able to run on the Mentor mode or Test mode. In the mentor mode, AI driven Intelligent Tutor of the simulator should guide the employee on the operation of the unit. In the Test mode, AI driven Intelligent Tutor of the simulator should assess the employee on the operation of the unit.

NTPC is presently looking for developing three such on-line simulators for 500 MW Sub-Critical, 660 MW Super-Critical and 800 MW Super-Critical on-line simulators. The time frame of development is one year for development and testing, followed by three years tie up for maintaining the system for use of NTPC employees.

NTPC is aware of a US based company which is providing the above on a commercial term, but is interested in developing the same through University - Industry Collaboration, based on the inspiration of our Honourable Prime MInister's Aatmanirbhar Vision. You are requested to kindly let us know if you are interested and capable of undertaking the above project on a commercial tie up basis by 15th July 2020. The institute is allowed to engage any third party vendor for any support in execution of the above proposal, but the responsibility of delivery will be with the institute.

In case you find interest on these two requirements of NTPC/PMI, you may kindly send your willingness with Budgetary estimations to the Dean R&D (deanrnd@admin.iitd.ac.in) by 10th July 2020.

Contact person at NTPC/PMI, Noida:

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