

**PATRATU STPP-I (3X800MW)
ASH MOUND PACKAGE
(Starter Dyke works etc)**

SCOPE OF WORK:

The work in present package mainly includes, the earthen Starter dyke for Permanent ash mound area, Sedimentation lagoon and Storage lagoon including peripheral road, diversion drain, RCC drain, Impervious liner works, water escape structure and spillway etc.

The detailed scope and description of work covered under this package has been specified in relevant clauses of Technical specifications.

SALIENT TECHNICAL FEATURES:

Ash mound is to be created (during plant operation) through mechanical systems envisaged under separate package, however civil works of Starter Dyke etc envisaged under Ash Mound package are covered in this package.

The total ash mound area is about 318 acres. As per topographical survey, the natural ground level (NGL) is varying from EL.360.0m to EL.382.0m. Ground water table is 2.5m to 3.0m below ground level in dry season. Natural drainage in vicinity of plant area has HFL of 367.5 m. The detailed technical specifications for the above works are covered as under in the relevant sections.

All construction works shall be carried out based on the drawings which are released by the owner for construction.

The major work involved in this package will be as given below;

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| 1. Excavation in soil | = 1,10,000 cum |
| 2. Earth work in Starter dyke construction | = 2,52,000 cum |
| 3. Sand filter | = 1,06,000 cum |
| 4. Non-woven Geotextile | = 78,000 Sqm |
| 5. Aggregate filter, Rock toe & rip rap | = 30,000 cum |
| 6. Turfing | = 57,000 Sqm |
| 7. Reinforced Concrete work | = 7,500 cum |
| 8. Cement Concrete Pavement | = 6,600 cum |
| 9. Impervious Liner (bentonite blended soil) | = 2,64,000 cum |
| 10. HDPE Liner | = 71,000 Sqm |

The Work involved is mainly related, but not limited, to the following:

1. Civil works in Permanent Ash Mound area:

Earthen starter dyke embankment with rock-toe along with toe-drain is to be provided all along the periphery of permanent ash mound for containment of stored ash and collection of toe-drain water.

Impervious liner is to be provided using bentonite blended soil liner with permeability less than 1×10^{-7} cm/sec to avoid ground water contamination.

Sand blanket filter to be provided in starter dyke and 30m inner peripheral stretch along starter dyke periphery in permanent ash mound area. Beyond 30 m peripheral stretch, blanket filter to be provided separately by NTPC during formation of ash mound.

2. Civil works in Temporary stockpile area:

Temporary stockpile area is to be created to stack the ash and reclaim the same for contingent requirement during ash mound formation envisaged under separate package. However, in civil works package, impervious liner is to be provided using bentonite blended soil liner with permeability less than 1×10^{-7} cm / sec to avoid ground water contamination.

3. Civil works in Sedimentation lagoon & Storage lagoon:

Earthen starter dyke embankment with rock-toe alongwith toe-drain is to be provided all along the periphery of Sedimentation Basin and Storage lagoon for containment of collected toe-drain water/ peripheral drain water.

Impervious liner using HDPE liner (1.0mm thick) is to be provided on the entire lagoon area, which is to be anchored at heel of dyke embankment.

RCC Spillway along with Water escape structure (WES) is to be provided for escape of excess water from storage lagoon to Purnatoli Nala for the safety of lagoon's peripheral dyke.

4. Construction of Peripheral roads and drains in entire Ash mound area:

Peripheral double lane cement concrete road to be provided at the periphery of ash mound for inspection purpose.

RCC peripheral drain is to be constructed at the periphery of ash mound area for collection of toe-drain water and diversion to Sedimentation lagoon.

5. Diversion of existing natural drains:

Presently natural nallah (existing) is passing across ash mound area of proposed Permanent ash mound area and storage lagoon area. The same is to be diverted by constructing open trench diversion drain at the outer periphery of ash mound area (B-C-D-E-F of Permanent ash mound area and north to east of storage lagoon area) for diversion of catchment area run-off water to downstream natural drain (Purnatoli Nala at North-east corner of Storage lagoon).