



ODISHA POWER GENERATION CORPORATION LTD

IB THERMAL POWER STATION

BANAHARPALLI

HAZARD IDENTIFICATION & RISK ASSESSMENT (OCCUPATIONAL HEALTH & SAFETY)

Name of work : Raising of embankment height for ash pond C & A from RL 208 M to RL 211 M.

FORMAT NO: ER 5/10-F1

FORMAT REVISION NO:		DOCUMENT REVISION STATUS : R- 21		DOCUMENT REVISION DATE : 10.08.18								
Sl. No.	Responsible Deptt.	Activity	Description of Hazard	Risk	Routine/Non-Routine(R/NR)	Existing Control	Qualitative Criteria		Quantitative Criteria			Significant/Non significant
							Legal	Interested party concern	Likelihood	Severity	Risk Level	
1	2	3	4	5	6	7	8	9	10	11	12	13
	ASH POND	Earth excavation work(Manual)	Collapsing of earth	Injury / disability	R	EM-4/29,EM-4/36,EM-4/29	N	N	1	2	2	NS
			Falling into trench	Injury leading to fractures.	R	EM-4/79,EM-4/36,EM-4/43	N	N	1	2	2	NS
		Transportation of debris.	Faliure of vehicle due to over loading/unsafe driving/mechanical failure	Injury/Fatal	R	EM- 4/47,	N	N	1	1	1	NS
			Falling of dust in eye while loading & unloading	Eye irritation	R	EM-4/93,	N	N	1	2	2	NS
			Exposure to hazardous waste which are mixed with debris	Injury	R	EM-4/8	N	N	1	2	2	NS
		Ash pond works										
		(a) Re-built of slope	Hitting of excavator to dumper driver/helper/supervisor	Injury/Disability/Fatal	R	EM-4/36	N	N	1	3	3	NS
			Exposure to dust	Respiratory problem	R	EM-4/93,	N	N	1	2	2	NS
		(b) Turfing	Hiting of spade with body parts during cutting of turf by spade	Injury	R	EM-4/29,	N	N	1	2	2	NS
			Fall from slope of ash dyke during placing of turf	Injury	R	EM-4/36,EM-4/47	N	N	1	2	2	NS
			Fall from slope of ash dyke during watering to turf	Injury	R	EM-4/36,EM-4/47	N	N	1	2	2	NS
		(c) Stone pitching	Hiting of stone with body parts while unloading from dumper	Injury	R	EM-4/47,EM-4/45	N	N	1	2	2	NS
			Hiting of stone with body parts due to fall of stone while carrying from stack to work spot manually	Injury	R	EM-4/47,EM-4/45	N	N	1	2	2	NS
			Slip/Fall while carrying stone on slope of ash dyke	Injury/ disability/Fatal	R	EM 4/47	N	N	1	2	2	NS
			Hiting of stone with body parts while placing stones	Injury	R	EM 4/47,EM-4/45	N	N	1	2	2	NS
			Slip/Fall while placing stone on slope of ash dyke	Injury/ disability	R	EM 4/47,EM-4/45	N	N	1	2	2	NS

		(d) Supression of ash blowing	Exposure to dust while sprinklig water	Physical Discomfort	R	EM-4/93,,EM-4/45	N	N	1	1	1	NS
		Raising of ash pond										
		(a) Ash embankment construction engaging machinerries	Hitting of excavator to dumper driver/helper/supervisor	Injury/Disability/Fatal	NR	EM 4/47,EM-4/21	N	N	1	2	2	NS
			Exposure to dust during unloading of earth	Physical Discomfort	NR	EM-4/93,EM-4/45	N	N	1	1	1	NS
			Slipping/over topping of roller during rolling	Major injury/ Fatal	NR	EM 4/47,EM-4/74,EM-4/21	N	N	1	3	3	NS
			Hitting by roller during rolling	Injury/Disability/Fatal	NR	EM-4/47,EM-4/74	N	N	1	3	3	NS
			Vehicle movement on narrow dyke wall	Injury/Disability/Fatal	NR	EM-4/47,EM-4/74, Signage displayed,Traffic pole constructed near both edge of the dyke for high visibility	N	N	1	3	3	NS
		(b) Earth embankment or earth covering	Hitting of excavator to dumper driver/helper/supervisor	Injury/Disability/Fatal	R	EM-4/74,EM-4/29	N	N	1	3	3	NS
			Exposure to dust during unloading of earth	Physical Discomfort	R	EM-4/93,,EM-4/45	N	N	1	1	1	NS
			Slipping/over topping of roller during rolling	Major injury/ Fatal	R	EM-4/74,EM-4/21	N	N	1	3	3	NS
			Hitting by roller during rolling	Injury/Disability/Fatal	R	EM-4/74,EM-4/21	N	N	1	3	3	NS
		(c)Sand blanket & chimney construction	Hitting by dumper during unloading sand	Injury/Disability/Fatal	NR	EM-4/74,EM-4/21	N	N	1	3	3	NS
			Exposure to sand blown during transportation & unloading	Physical Discomfort,Eye injury	NR	EM-4/74,EM-4/21	N	N	1	3	3	NS
		(d)Inverted filter construction	Hiting of stone/boulder with body parts while unloading from dumper	Injury	NR	EM-4/29,EM-4/74	N	N	1	2	2	NS
			Hiting of stone/metal with body parts due to fall of stone while carrying from stack to work spot manually	Injury	NR	EM-4/47,EM-4/45	N	N	1	2	2	NS
			Slip/Fall while carrying stone/metal/sand on slope of ash dyke	Injury/ disability/Fatal	NR	EM 4/47	N	N	1	2	2	NS
			Hiting of stone/metal with body parts while placing stones	Injury	NR	EM-4/47,EM-4/45	N	N	1	2	2	NS
			Slip/Fall while placing stone/metal /sand on slope of ash dyke	Injury/ disability	NR	EM-4/47,EM-4/45	N	N	1	2	2	NS
		(e) Drain construction	Hiting of stone/boulder with body parts while unloading from dumper	Injury	R	EM-4/47,EM-4/45	N	N	1	2	2	NS
			Hiting of stone/metal with body parts due to fall of stone while carrying from stack to work spot manually	Injury	R	EM-4/47,EM-4/45	N	N	1	2	2	NS
			Slip/Fall while carrying stone/metal/sand and concrete on slope of ash dyke	Injury/ disability/Fatal	R	EM 4/47	N	N	1	2	2	NS
			Hiting of stone/metal with body parts while placing stones	Injury	R	EM-4/47,EM-4/45	N	N	1	2	2	NS

			Slip/Fall while placing stone/metal /sand & concrete on slope of ash dyke	Injury/ disability	R	EM-4/47,EM-4/45	N	N	1	2	2	NS
		(f) Road construction	Hiting of construction materilas with body parts while unloading from dumpers	Injury	R	EM-4/47,EM-4/45,EM-4/74	N	N	1	3	3	NS
			Hiting of stone with body parts due to fall of stone while carrying from stack to work spot manually	Injury	R	EM-4/47,EM-4/45	N	N	1	2	2	NS
			Hiting of stone with body parts while placing stones	Injury	R	EM-4/47,EM-4/45	N	N	1	2	2	NS
			Slipping/over topping of roller during rolling	Major injury/ Fatal	R	EM-4/74,EM-4/21	N	N	1	2	2	NS
			Exposure to dust while cleaning surface	Respiratory problems / Lung infection/	R	EM-4/93,,EM-4/45	N	N	1	1	1	NS
				Eye irritation	R	EM-4/45	N	N	1	2	2	NS
			Contact with hot material	Burn Injury	R	EM-4/45,EM 4/43	N	Y	1	2	2	NS
		(g) Turfing	Hiting of spade with body parts during cutting of turf by sapde	Injury	R	EM-4/47,EM-4/45	N	N	1	2	2	NS
			Fall from slope of ash dyke during placing of turf	Injury	R	EM-4/47,EM-4/45	N	N	1	2	2	NS
			Fall from slope of ash dyke during watering to turf	Injury	R	EM-4/47,EM-4/45	N	N	1	2	2	NS
		Stacking of construction materials at work site	Road accident due to dumping of construction material and work on road	Injury	NR	EM 4/47,EM-4/74,EM-4/21	N	N	1	2	2	NS
		Movement of Dumpers/Dozer/tractors/tankers & oth, heavy vehicles & light vehicles on ash pond dykes	Slipping/over topping of vehicle during transportation of materials	Major injury/ Fatal	R	EM 4/47, EM 4/74, Effective supervision and training. Flaggers, Vehicle Speed control. Edge Guard Provision	N	N	1	3	3	NS
			Hitting by heavy vehicles & machinery during rolling	Injury/Disability/Fatal	R	EM-4/74,EM-4/21	N	N	1	2	2	NS
			Exposure to dust during movement of vehicles/machineries	Physical Discomfort,Eye injury	R	EM-4/93,,EM-4/45	N	N	1	1	1	NS
			Exposure to noise<85db during running of vehicles	Physical Discomfort	R	EM-4/23,EM-4/45	N	N	1	2	2	NS
			Exposure to noise>85db during running of vehicles	Hearing impaired	R	EM-4/23,EM-4/45	N	N	2	2	4	NS
			Exposure to vehicular emission during working of heavy vehicles & machineries	Physical Discomfort,Eye injury	R	EM-4/74,EM-4/21	N	N	1	1	1	NS
		Painting	Falling of objects from height	Injury	NR	EM-4/25,EM-4/45	N	N	1	3	3	NS
			Inhalation of fumes	Respiratory problems	NR	EM-4/47,EM-4/45	N	N	1	1	1	NS
			Falling from height	Injury	NR	EM 4/79, EM-4/47, MP-08	N	N	1	3	3	NS
			Collapse/failure of scaffolding	Injury	NR	EM 4/7, 4/47, MP-08	N	N	1	3	3	NS
		Cleaning activities/Sanitary works	Exposure to dust	Respiratory problems	R	EM-4/93,,EM-4/45	N	N	1	1	1	NS
			Exposure to noise<85db	Physical discomfort	R	EM-4/23,EM-4/45	N	N	1	1	1	NS
			Exposure to noise>85 db	Hearing impairment	R	EM-4/23,EM-4/45	Y	N	1	2	2	NS
			Exposure to micro organisms / bacteria during cleaning or repair of toilets / urinals / pipelines	Health hazards due to infection	R	EM-4/41,EM-4/45,EM-4/61	N	N	1	2	2	NS
		Earth excavation work in shallow foundation/trenches	Collapsing of earth	Injury	R	EM-4/47,EM-4/36	N	N	1	2	2	NS
			Falling into trench	Injury leading to fractures	R	EM-4/47,EM-4/36,EM-4/79	N	N	1	2	2	NS

		Concreting at height	Fall from height	Injury	R	EM-4/7,EM-4/79,EM 4/43,MP-08	N	N	1	3	3	NS
			Failure of scaffolding	Injury	R	EM 4/7, MP-08	N	N	1	3	3	NS
			Falling of constructions materials	Injury	R	EM 4/47	N	N	1	2	2	NS
			Exposure to dust	Respiratory problems	R	EM-4/93,,EM-4/45	N	N	1	1	1	NS
			Contact with concrete	Skin irritation	R	EM-4/45	N	N	1	1	1	NS
		Grass cutting	Snake bite by poisonous snake	Fatal	R	EM 4/43,EM-4/45	N	N	1	3	3	NS
			Contact with vegetation	Skin irritation	R	EM-4/45	N	N	1	1	1	NS
			Thorn prick	Injury	R	EM-4/29	N	N	1	1	1	NS
		Transportation of debris	Faliure of vehicle due to overloading/unsafe dtiving /mechanical failure	Accident	R	EM 4/45	N	N	1	3	3	NS
			Falling of dust in eye while loading & unloading	Eye irritation	R	EM-4/93,,EM-4/45	N	N	1	2	2	NS

HIRA for the work:Raising of embankment height for ash pond C & A from RL 208 M to RL 211 M. Providing and Laying HDPE liners for Ash Pond 'A' at ITPS.

1	Earth excavation work(Manual)	AB	Collapsing of earth	Injury / disability	N	N	N	4	2	3	24	NS
2		AB	Falling into trench	Injury leading to fractures.	N	N	N	4	30	3	360	S
3	Transportation of Geomembrane.	AB	Faliure of vehicle due to over loading/unsafe driving/mechanical failure	Injury/Fatal	N	N	N	4	50	3	600	S
4		N	Falling of dust in eye while loading & unloading	Eye irritation	N	N	N	7	20	3	420	S
5		AB	Exposure to hazardous waste which are mixed with debris	Injury	N	N	N	7	2	3	42	NS
6	(b) Earth /ash covering	AB	Hitting of excavator to dumper driver/helper/supervisor	Injury/Disability/Fatal	N	N	N	8	5	3	120	NS
7		N	Exposure to dust during unloading of earth	Physical Discomfort	N	N	N	6	5	5	150	NS
8		AB	Slipping/over topping of roller during rolling	Major injury/ Fatal	N	N	N	8	5	3	120	NS
9		AB	Hitting by roller during rolling	Injury/Disability/Fatal	N	N	N	8	5	3	120	NS
10	Stacking of construction materials at work site	AB	Road accident due to dumping of construction material and work on road	Injury	N	N	N	4	30	3	360	S