Condition Assessment Manual

Trash Racks and Intakes Inspection Form and Checklist

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U.S. DEPARTMENT OF ENERGY
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Trash Rack and Intake - Inspection Form

General Information:

Date of Site Visit: _____ Unit No. _____

Plant name: _____

Sources of data: _____

Manufacturer: _____ Age: _____

General Trash Rack Description and Condition: _____

General Intake Description and Condition: _____

Inspection Objective: _____

Previous Inspection History and Maintenance Repairs: _____

Method of Cleaning Trash Racks of Debris: _____

Method of Removing Debris from Plant: _____

Table 1: Trash Racks		
Trash Rack Number	Differential Head (ft)	
	Clean	Clogged

Trash Rack and Intake Check List				
Topic	**Yes**	**No**	**N/A**	**Comments/Details**
A. General				
What is the general construction of the trash racks? *[Materials (steel, HDPE, FRP), bar shape, age, type of connections, etc.]*				
What is the general intake construction? *[Type of intake (submerged vs. non-submerged and multilevel or single inlet), penstock (buried or exposed), construction materials (steel, concrete, or unlined tunnel), etc.]*				
Are the trash racks and intakes accessible for inspections? *[Can visual assessment of trash racks be performed from the surface? Will divers or ROVs be required? Other limitations on accessibility?]*				
Have all plant records regarding trash rack and intake maintenance, repairs, operating conditions, performance data, etc. been requested/gathered?				
B. Head Differential				
How is head differential monitored at the plant?				
If the plant does not monitor head differential, can measurements be taken during the assessment? *[If yes then record measurements in Table 1 found on page 4]*				
How much head differential is there at various levels of cleanliness? *[Trash racks are clean, partially clogged, or severely clogged]*				
Is head differential data used to schedule/automate trash cleaning? *[i.e. when head differential reaches a certain value the trash racks are cleaned]*				

Trash Rack and Intake Check List - Continued				
Topic	**Yes**	**No**	**N/A**	**Comments/Details**
C. Design/Damage				
Are the original trash racks still in use?				
If the trash racks have been replaced, what changes were made to their design and why were these changes made? *[This includes bar shape, bar spacing, material, connections etc.]*				
Has there been any history of severe trash rack degradation or trash rack failure? *[If so, what were the causes?]*				
D. Debris				
What size debris is typically captured on the trash racks? *[Aquatic milfoil, tree trunks, etc]*				
How does debris accumulation vary seasonally? *[Which periods of the year is debris the heaviest? Does the type of debris vary by season?]*				
E. Automation/Mechanization				
What is the history of trash rack cleaning methods? *[What methods were originally used to clear debris? What is the reason for any changes that may have occurred?]*				
How is debris removed from the trash racks? *[Manually or mechanically?]*				
How is debris removed from the plant? *[Manually or conveyor system?]*				
If a mechanical trash raking system is used, how is its cleaning schedule regulated? *[Manually, timed, automated using head differential measurements, etc.]*				

Trash Rack and Intake

Assessment Conclusions and Recommendations:

For overall questions
please contact:

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