U.S. Army Corps of Engineers,
Portland District
(Contract No.W9127N-08-D-0006)
Task Order No. 0006

Engineering Design Report Outline

The Dalles East Fish Ladder Auxiliary Water Backup System

Columbia River, Oregon-Washington

Prepared by:

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A-E CONTRACTOR STATEMENT OF TECHNICAL REVIEW
COMPLETION OF INDEPENDENT TECHNICAL REVIEW

The A-E Contractor, HDR Engineering, has completed The Dalles East Fish Ladder Auxiliary Water Backup System Engineering Design Report**.** Notice is hereby given that an independent technical review, that is appropriate to the level of risk and complexity inherent in the project, has been conducted as defined in the Quality Control Plan. During the independent technical review, compliance with established policy principles and procedures, utilizing justified and valid assumptions, was verified. This included review of: assumptions; methods, procedures, and material used in analyses; alternatives evaluated; the appropriateness of data used and level obtained; and reasonableness of the result, including whether the product meets the customer's needs consistent with law and existing USACE policy. The independent technical review was accomplished by an independent HDR team. All comments resulting from independent technical review have been resolved.

Technical Review Team Leader *(Signature)*	Date
Project Manager, A-E Contractor *(Signature)*	Date

CERTIFICATION OF INDEPENDENT TECHNICAL REVIEW

Significant concerns and the explanation of the resolution are as follows:

(Describe the major technical concerns, possible impact, and resolution)

As noted above, all concerns resulting from independent technical review of the project have been fully resolved.

Principal, A-E Contractor *(Signature)*	Date

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Executive Summary

Pertinent Data

PERTINENT PROJECT DATA THE DALLES LOCK AND DAM - LAKE CELILO		
GENERAL		
Location	Columbia River, Oregon and Washington, River Mile 192	
Drainage area	Square miles	237,000
RESERVOIR – LAKE CELILO		
Normal minimum pool elevation	Feet msl	155
Normal maximum pool elevation	Feet msl	160
Maximum pool elevation (PMF regulated, 2009)	Feet msl	178.4
Minimum tailwater elevation	Feet msl	72.5
Maximum tailwater elevation (PMF regulated, 2009)	Feet msl	127.2
Reservoir length (to John Day Dam)	Miles	23.5
Reservoir surface area – normal maximum power pool (EL 160.0)	Acres	9,400
Storage capacity (EL. 160.0)	Acre-feet	332,500
Power drawdown pool (EL. 155)	Acre-feet	53,500
Length of shoreline at full pool (EL. 160.0)	Miles	55
FLOOD CONDITIONS		
Probable maximum flood (unregulated)	ft^3/s	2,660,000
Probable maximum flood (regulated)	ft^3/s	2,060,000
Standard project flood (unregulated)	ft^3/s	1,580,000
Standard project flood (regulated)	ft^3/s	840,000
100-year flood event (regulated)	ft^3/s	680,000
SPILLWAY		
Type	Gate-controlled Gravity Overflow	
Length	Feet	1,447
Elevation of crest	Feet msl.	121
Number of gates		23
Height (apron to spillway deck)	Feet	130
NAVIGATION LOCK		
Type	Single Lift	
Lift – normal	Feet	87.5
Lift – maximum	Feet	90
Net clear length	Feet	650
Net clear width	Feet	86
Normal depth over upper sill	Feet	20
Minimum depth over upstream sill	Feet	15
Minimum depth over downstream sill	Feet	15

PERTINENT PROJECT DATA THE DALLES LOCK AND DAM - LAKE CELILO		
POWER PLANT		
Powerhouse type	Conventional (indoor)	
Powerhouse width	Feet	239
Powerhouse length	Feet	2,089
Number of Main Generating Units		*22*
Installed power capacity	Kilowatts	1,806,800
Peak generating efficiency flow	ft^3/s	260,000
Maximum flow capacity	ft^3/s	320,000
Fishway Units (Not Included Above)		*2*
Installed power capacity	Kilowatts	28,000
Peak generating efficiency flow	ft^3/s	2,500
Maximum flow capacity	ft^3/s	2,500
Station Service Units (Not Included Above)		*2*
Installed power capacity	Kilowatts	6,000
Peak generating efficiency flow	ft^3/s	300
Maximum flow capacity	ft^3/s	300
FISH FACILITIES		
Adult ladders		2
Ladder designations		North and East
North ladder width	Feet	24
East ladder width	Feet	30
Ladder slope (typical)		1v:16h
Ladder elevation change (typical)	Feet	84
WASCO PUD POWER PLANT (OPERATING AT THE NORTH FISH LADDER AWS)		
Powerhouse type	Conventional (indoor)	
Powerhouse width	Feet	44
Powerhouse length	Feet	48
Intake Structure width	Feet	25
Intake Structure length	Feet	125
Number of Main Generating Units		*1*
Installed power capacity	Kilowatts	5,000
Peak generating efficiency flow	ft^3/s	800
Maximum flow capacity	ft^3/s	800

Acronyms and Abbreviations

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