Economic Analysis
Unit Uprate Project
(As-Built Numbers)

Reviewed 8/5/04 for GKH

Project Information and Economic Factors	
Life of Project (Years)	20
Cost of Replacement Energy ($/MWH)	$25
Interest Rate	6.35%
Net Generation Increase with HP Turbine Upgrade Only (MW)	25
Net Generation Increase With All Modifications (MW)	75
Fuel Cost Spot Market ($/MBTU)	$1.45
Total Project Cost ($1,000's)	$26,973
Annual Station Capacity Factor	90%

Economic Results	
Capital Cost per KW Increase ($/KW)	$180
Payback (Years)	1.01
Benefit/Cost Ratio	13.7
Cost of Additional Power (Mils/KWH) *See Note 2 & 4*	13.6

Performance Comparisons	**Before**	**After**
Station Gross Capacity (MW)	1750	1900
Estimated Unit Gross Heat Rate (BTU/KWH)	9028	8950
Estimated Annual Station Coal Burn (Tons/Year)	5,267,224	5,669,292
Estimated Station Auxiliary Loads (MW)	93	102

Notes:
1. Capital Cost per KW increases equals the total project cost divided by the net generation increase with all modifications
2. Cost of additional power equals capital cost of the project amortized over 20 years plus the cost of the increased fuel burn per year divided by the annual net generation increase with all modifications.
3. Spot market price of fuel is used because the increased coal usage will be purchased outside of the long term contracts.
4. O&M costs are not included in the cost of additional power because it is assumed that they will not increase significantly as a result of the project.

ΔHR HP turbine upgrades (8/22/02 calc)

U1 -1.40%
U2 -0.68%
> Avg station -1.04%

9028 (1 - .0104) = 8934 B/kwh

Prepared by Jerry-H 12/2002

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