STRATEGIC PETROLEUM RESERVE PROJECT PROPOSAL

(M&O CONTRACTOR FORM)

SITE(S) AFFECTED: SJ	
CONTRACTOR CHANGE NO.: 74-012	REV:
☒ ENGINEERING CHANGE:	
☐ OTHER: (ADMIN/NON-ENGR. CHNG)	
ECP NO.:	

SECTION 1 - SUMMARY INFORMATION

TITLE: SUGARLAND BOOSTER PUMP MODIFICATION

SPONSOR: M. THOMPSON
ORG:. EQUILON PL
PHONE: 713/241-1937

FUNDING/SCHEDULE IMPACT

RECOMMENDED RANK:

SOURCE	TOTAL ESTIMATED COST	SCHEDULING	AUTHORITY
☐ SPR BLI _____	FY _____ _____ _____	☐ NO IMPACT	☐ PCCB ☐ CLASS I
☐ CONTRACTOR BASELINE	DESIGN _____ _____ _____	☐ NEW SCHEDULE REQ'D.	☐ ECC ☐ CLASS II
☐ O&M	CONSTRUCTION/ IMPLEMENTATION _____ _____ _____	☐ SCHEDULE CHANGE REQ'D.	☐ CONTRACTOR
☐ LE	TOTAL: ___ ___ ___	☐ MILESTONE _____	**FINAL DISPOSITION**
☐ MM		☐ CMCR NO. _____	☐ APPROVE
☐ OTHER _____			☐ CONDITIONAL APPROVAL
☐ BCR			☐ DISAPPROVE
			☐ CANCEL

SECTION II - DYNMcDERMOTT REVIEW AND APPROVAL (CLASS II)

REVIEWERS (NAME/ORG.)	CONCURRENCE YES	CONCURRENCE NO	COMMENTS:
SITE MANAGER	☒	☐	Signature on file
SITE ENGINEER	☐	☐	
-	☐	☐	
	☐	☐	
	☐	☐	
	☐	☐	
	☐	☐	
	☐	☐	
	☐	☐	
	☐	☐	
	☐	☐	

TRB CHAIRMAN K K Knight	DATE 5/3/99	DISPOSITION ☒ CONCUR ☐ APPROVE ☐ DISAPP. ☐ CANCEL	COMMENTS This is acceptable provided that Equilon agree to return the pumps to the current configuration at such time as the terminal reverts to DOE.
O&M PROJECTS COORDINATOR	DATE	DISPOSITION ☐ CONCUR ☐ APPROVE ☐ DISAPP. ☐ CANCEL	

74-012, Sugarland Booster Pump Modification

STRATEGIC PETROLEUM RESERVE PROJECT PROPOSAL

(M&O CONTRACTOR FORM)

SITE(S) AFFECTED: SJ

CONTRACTOR CHANGE NO.: 74-012 REV:

☒ ENGINEERING CHANGE

☐ OTHER: (ADMIN/NON-ENGR. CHNG)

BCP NO.:

SECTION I - SUMMARY INFORMATION

TITLE: SUGARLAND BOOSTER PUMP MODIFICATION

SPONSOR: M. THOMPSON

ORG.: EQUILON PL

PHONE: 713/241-1937

FUNDING/SCHEDULE IMPACT

SOURCE	TOTAL ESTIMATED COST	SCHEDULING	AUTHORITY
☐ SPR SLI _____	FY _____ _____ _____	☐ NO IMPACT	☐ PCCB ☐ CLASS I
☐ CONTRACTOR BASELINE		☐ NEW SCHEDULE REQ'D.	☐ ECC ☐ CLASS II
☐ O&M	DESIGN _____ _____ _____	☐ SCHEDULE CHANGE REQ'D.	☐ CONTRACTOR
☐ LS	CONSTRUCTION/ IMPLEMENTATION _____ _____ _____	☐ MILESTONE _____	**FINAL DISPOSITION**
☐ MM		☐ CMCR NO. _____	☐ APPROVE
☐ OTHER _____	TOTAL: _____ _____ _____		☐ CONDITIONAL APPROVAL
☐ BCR			☐ DISAPPROVE
			☐ CANCEL

SECTION II - DYNMcDERMOTT REVIEW AND APPROVAL (CLASS II)

REVIEWERS (NAME/ORG.)	CONCURRENCE YES	CONCURRENCE NO	COMMENTS:
SITE MANAGER Brian Summ	☑	☐	
SITE ENGINEER Barry Birch	☑	☐	
	☐	☐	
	☐	☐	
	☐	☐	
	☐	☐	
	☐	☐	
	☐	☐	
	☐	☐	
	☐	☐	
	☐	☐	

	DATE	DISPOSITION	COMMENTS
TRB CHAIRMAN		☐ CONCUR ☐ APPROVE ☐ DISAPP. ☐ CANCEL	
O&M PROJECTS COORDINATOR		☐ CONCUR ☐ APPROVE ☐ DISAPP. ☐ CANCEL	

TRBSUM2.DOT

Item ID: 353301 (Current)

04-01-99 08:30:24 AM

Approved

74-012

Concerns,

- The booster pumps at present are designed for 25,000 @ 90 psi. This modification appears to cut that in half or approx 11,500 bph

- Drawdown throughput rate at the docks is for 435 mbd. This is assuming a max rate capability of 40,000 bpH (which was accomplished using 2 boosters in parallel). The planned modification will inhibit rates to dock # 2 to a max of 36,500 bpH assuming that spare pump 3 will always be used in conjuntion with pumps 1 or 2. Pumps 1 & 2 in par. will only produce 23000 bpH.

Bottom line – This may effect published drawdown rate available from Bayou Choctaw.

Reconnend that ~~G. Kattus~~ T. Henricks group research.

APR-19-99 02:18 PM DM ADMIN BC SITE 504 687 4588 281 P.02

STRATEGIC PETROLEUM RESERVE

WR #

ENGINEERING CHANGE PROPOSAL

SUMMARY SHEET

CLASS I CHANGE

ECP NUMBER	TITLE
SJ-M/O-4611	Sugarland Booster Pump Modifications

BUDGET SOURCE

- ☐ SPR BLI
- ☐ CONTRACTOR BASELINE
- ☐ BCR
- ☑ OTHER Equilon Funding

AUTHORITY

☑ PCCB ☐ ECC

SCHEDULE

☐ YES
MILESTONE NUMBER
CMCR NUMBER

☐ NO

TOTAL ESTIMATED COST OF CHANGE

	FY	FY	FY
DESIGN	—	—	—
CONSTRUCTION/M&O	—	—	—

TOTAL Costs part of the approved Debottlenecking ECP $1.4million

SJ-M/O-4610 "Sugarland Terminal Debottlenecking" Approved by the PCCB 8/24/98, Costs: $1,425,000

PCCB / ECC SIGNATURES	DISPOSITION: CONCUR	NON CONCUR	DATE
DOE SENIOR SITE OFFICIAL			
APM TECHNICAL ASSURANCE	✓		3/10/99
APM SYSTEMS AND PROJECTS for [illegible]			3/10/99
APM MAINTENANCE AND OPERATIONS			3/10/99
DEPUTY PROJECT MANAGER			
DOE CMO			
PROJECT MANAGER			
DEPUTY ASSISTANT SECRETARY -SPR			

COMMENTS CONDITIONS / LIMITATIONS

PCCB / ECC ACTION

☑ FULL APPROVAL ☐ CONDITIONAL / LIMITED APPROVAL ☐ DISAPPROVAL

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STRATEGIC PETROLEUM RESERVE

WR #

ENGINEERING CHANGE PROPOSAL

ECP NUMBER	ECP TITLE	PAGE 1 OF 1
SJ-M/O-4611	Sugarland Booster Pump Modifications	

CONTRACTOR CHANGE NO./REV.	INITIATED BY	DATE	SUBMITTED BY	DATE
	Mike Thompson	3/5/99	Mike Thompson	3/5/99
	ORG./CONTRACTOR	PHONE NO.	ORG./CONTRACTOR	PHONE NO.
	Equilon PL	7132411937		

PRIORITY

- ☐ EMERGENCY
- ☒ URGENT
- ☐ ROUTINE

VALUE ENGINEERING	DRAWDOWN CRITICAL	ROM ESTIMATE
☐ VEP (MANDATORY)	☐ YES	$ see below___
☐ VECP (VOLUNTARY)	☐ NO	

DESCRIPTION:

PROBLEM / EXISTING CONFIGURATION The current pumping configuration at Sugarland does not allow for efficient pumping of oil from terminal tanks to Placid Refinery via the Redstick Pipeline. To pump oil at the rates required to meet our scheduling needs we must use a booster pump (SJT 1 or 2) and a Mainline pump (SJT-6) in series. Because of pressure limitations on the terminal piping (180 psi) and the pipeline (325 psi) we must recirculate flow from the booster pump and take a large pressure drop across the pipeline control valve during this operation. This creates operational problems and increases power costs.

PROPOSED SOLUTION / ENHANCEMENT The proposed solution is to modify pumps SJT 1 and 2 to reduce their head and capacity. The modification will be to either remove one stage from each pump or replace the lower end of the pump (bowls and impellers) with lower capacity/lower head bowls and impellers. If we de-stage the pumps they will have a capacity of 11,500 bph at 118 psi differential. If we replace the bowls and impellers, the pump will have a capacity of 11,500 bph at 99 psi differential. We propose modifying both pumps to allow for a primary pump and a spare.

REASON / JUSTIFICATION The modification is required to reduce power costs and protect the pipeline control valve (WI-120-C). As configured, we would have to take approximately 100 psi pressure drop across the control valve. This high pressure drop could cause damage to the valve. Also, recirculating from the discharge of the booster pump limits the other operations that can occur simultaneously with the Redstick deliveries.

NOTE: This work will be completed within the budget for the previously approved Sugarland Debottlenecking ECP.

CI'S AFFECTED

TECHNCIAL ANALYSIS/RECOMMENDATION

IMPLEMENTATION METHOD

- ☐ SUBCONTRACT
- ☐ M&O LABOR (LOE)
- ☐ COMBINATION

ENGINEERING	DATE	DOE SSR	DATE	
Mike Thopson [signature]	3/5/99	[signature]	3/11/99	☑ CONCUR ☐ NONCONCUR

D-655

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STRATEGIC PETROLEUM RESERVE
ENGINEERING CHANGE PROPOSAL
CONFIGURATION CHANGE AFFECTED REPORT

WR #

TO BE COMPLETED BY TECHNICAL REVIEW PROCESS, ENGINEERING AND CONFIGURATION MANAGEMENT ORGANIZATION DEFINED PROCESS

ECP NO.	CONRACTOR CHANGE NO.	REV.	CHANGE CLASSIFICATION ☐ CLASS I ☐ CLASS II	PAGE 2 OF

FUNCTIONS AFFECTED	
VENDOR	ITEM
YES	LEVEL I ☒ LEVEL II ☐ CRITERIA
NONO	PERFORMANCE CRITERIA
NONO	RAM
NONO	INTERFACE CHARCTERISTICS
NONO	I/O POINTS
NONO	DOE LEVEL I, II, III SCHEDULES
NONO	GUARANTEES/DELIVERABLES
NONO	SAFETY/ENV/FP (CIRCLE ONE)
NONO	SECURITY REQUIREMENTS
NONO	OPCS SOFTWARE
NONO	OPCS HARDWARE
NONO	OPCS FIRMWARE
NONO	SETPOINTS/RANGES
NONO	DIP SWITCH SETTINGS/JUMPERS
NONO	MASTER CI LIST
NONO	WELLHEAD CONFIGURATION
NONO	SPARES/ROVISIONING REQUIREMENTS
NONO	GOVERNMENT FURNISHED EQUIPMENT
NONO	ENERGY USAGE
NONO	OPERATIONS MODESL
YESNO	OTHER
	DOCUMENTS AFFECTED
YES/NO	ITEMS
	PIPING
NONO	101 - PROCESS FLOW DIAGRAMS
NONO	102 - MECHANICAL FLOW DIAGRAMS
YESYES	103 - PIPING AND INSTRUMENTATION DIAGRAMS (P&ID'S)
NONO	104 - UTILITY FLOW DIAGRAMS
NONO	105 - GENERAL PIPING PLANS
NONO	106 - AREA PLANS (MECHANICAL EQUIPMENT LOCATION)
NOYES	122 - WELL HEAD DRAWINGS
NONO	130 - VALVE LIST
NONO	135 - LINE LIST
NONO	140 - PSV LIST
NONO	150 - STANDARDS
	CIVIL/STRUCTURAL
NONO	201 - PLOT PLANS
NONO	202 - SITE WORK: GRADING (ROUGH & FINISH) DRAIN FENCING
NONO	210 - FOUNDATIONS: LOCATION PLANS
NONO	216 - MINES (WEEKS ISLAND ONLY)
NONO	250 - STANDARDS
	ELECTRICAL
NONO	301 - AREA CLASSIFICATION
NONO	302 - ONE LINE DIAGRAMS
NONO	303 - SCHEMATIC DIAGRAMS
YESNO	304 - POWER PLAND AND DETAILS
NONO	305 - LIGHTING PLAND AND DETAILS
NONO	307 - SUBSTATION PLANS AND DETAILS
YESNO	308 - WIRING DIAGRAMS
NONO	310 - GROUNDING
NONO	311 - CONDUIT & CABLE SCHEDULES (INCLUDING INST.)
NONO	313 - MCC/SWITHC GEAR EVALUATION & SCHEDULE

DOCUMENTS AFFECTED	
YES/NO	ITEM
	ELECTRICAL (cont'd)
NONO	315 - CATHODIC PROTECTION
NONO	350 - STANDARDS
	INSTRUMENTATION
NONO	401 - BLOCK DIAGRAM
NONO	402 - LOOP DIAGRAMS
NONO	403 - INSTRUMENT PLANS
NONO	404 - INSTRUMENT WIRING DIAGRAM
NONO	409 - INSTRUMENT INDEX
NONO	450 - STANDARDS
	PIPING
NONO	501 - ALIGNMENT SHEETS
NONO	509 - PIPELINE DRWGS (MAINLINE VALVES, DRIPS, SCRAPER, TRAPS, ETC.)
NONO	550 - STANDARDS
	ARCHITECTUAL
NONO	720 - ELEVATIONS AND FLOOR PLANS
NONO	750 - STANDARDS
	DOCUMENTATION
NONO	900 - RESERVED
NONO	901 - TECHNICAL/PERFORMANCE/DESIGN CRITERIA
NONO	910 - DESIGN DESCRIPTION/BASIS
NONO	911 - PROCESS SET POINT DOCUMENTS
NONO	912 - EQUIPMENT LIST
NONO	913 - MOV LIST
NONO	915 - ELECTRICAL SAFETY
NONO	920 - I/O DOCUMENT
NOYES	930 - OPERATIONS MANUALS
NONO	930 - MAINTENANCE MANUALS
NONO	950 - STANDARD SPECIFICATIONS
NONO	970 - TASK SPECIFICATIONS
NO	990 - CONFIGURATION MANAGEMENT REPORTS/I.B.M.

COMENTS:
* Pump Vendor / Equipment Data

ENGINEERING	DATE	CONFIGURATION MANAGEMENT	DATE
		Troy Ryall	3/19/99
		EH	3/3/99

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STRATEGIC PETROLEUM RESERVE

WR #

ENGINEERING CHANGE PROPOSAL

SOFTWARE, HARDWARE, FIRMWARE CHANGE

CONTRACTOR CHANGE NUMBER | REVISION NUMBER | ECP NUMBER | PAGE 3 OF

SOFTWARE CHANGE ANALYSIS	HARDWARE/SOFTWARE AFFECTED (NOTE: REDLINE CI BOM)

DISPOSITION OF PARTS

☐ REWORK SITE COMPONENTS ONLY ☐ REWORK ALL SITE COMPONENTS ☐ COMPONENTS NOT AFFECTED

☐ OTHER (DESCRIBE)

COMPONENT COMPATIBILITY (LIST COMPONENTS SEPERATELY IF COMPATIBILITIES ARE DIFFERENT)

☐ INTERCHANGEABLE ☐ DRAWDOWN COMPATIBLE ☐ NONCOMPATIBLE

OPCS SUPPORT ENGINEER DATE FUNCTIONAL MANAGER DATE

IMPLEMENTATION / TEST COMMENTS

WITNESSED BY | DATE

TEST APPROVED BY | DATE | CHANGE RELEASE AUTHORITY | DATE

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NUMBER:
TITLE:

EXECUTIVE SUMMARY:

IMPLEMENTATION PLAN:

IMPLEMENTATION COST:

DESIGN:
CONSTRUCTION:

TOTAL:

LIFE CYCLE COST:

IMPACT SUMMARY:

LEVEL I, II, III CRITERIA:

CONTRACT COMPLETION DATES:

CODES, REGULATIONS, PERMITS, ETC.:

GFE:

SAFETY, ENVIRONMENTAL, FIRE PROTECTION SYSTEMS, SECURITY:

SCHEDULES: