

APPENDIX B SUPPLEMENT TO  
GENERIC LICENSING TOPICAL REPORT  
EDR-1

SUMMARY OF FACILITY SPECIFIC CRANE DATA  
SUPPLIED BY EDERER INCORPORATED

FOR

PRIVATE FUEL STORAGE, LLC  
PRIVATE FUEL STORAGE FACILITY  
SKULL VALLEY, UTAH

150/25 TON SEMI-GANTRY CRANE

P.O. # 0599602-023  
EDERER S.O. NO. F2622

REVISION 1  
12/9/98

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PFSF, SKULL VALLEY, UTAH

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C.1.a	III.C (C.1.a)	1. THE ACTUAL CRANE DUTY CLASSIFICATION OF THE CRANE SPECIFIED BY THE APPLICANT	1. THE CRANE HAS A ASME NOG-1 TYPE 1 CRANE DUTY CLASSIFICATION.
C.1.b	III.C (C.1.b)	1. THE MINIMUM OPERATING TEMPERATURE OF THE CRANE SPECIFIED BY THE APPLICANT.	1. THE CRANE WAS DESIGNED AND FABRICATED FOR A MINIMUM OPERATING TEMPERATURE OF 0°F.
C.2.b	III.C (C.2.b) III.E.4	1. THE MAXIMUM EXTENT OF LOAD MOTION AND THE PEAK KINETIC ENERGY OF THE LOAD FOLLOWING A DRIVE TRAIN FAILURE.  2. PROVISIONS FOR ACTUATING THE EMERGENCY DRUM BRAKE PRIOR TO TRAVERSING WITH THE LOAD, WHEN REQUIRED TO ACCOMMODATE THE LOAD MOTION FOLLOWING A DRIVE TRAIN FAILURE.	1. BOTH MAIN & AUX HOIST WERE DESIGNED SUCH THAT THE MAXIMUM LOAD MOTION FOLLOWING A DRIVE TRAIN FAILURE IS LESS THAN 1 FOOT AND THE MAXIMUM KINETIC ENERGY OF THE LOAD IS LESS THAN THAT RESULTING FROM 1 INCH OF FREE FALL OF THE MAXIMUM CRITICAL LOAD.  2. PROVISIONS FOR AUTOMATICALLY ACTUATING THE EMERGENCY DRUM BRAKE PRIOR TO TRAVERSING WITH THE LOAD ARE NOT REQUIRED SINCE THE MAXIMUM AMOUNT OF LOAD MOTION AND KINETIC ENERGY CAN BE ACCOMODATED BY THE FACILIY DESIGN.

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C.3.e	III.C(C.3.e)	1. THE MAXIMUM CABLE LOADING FOLLOWING A WIRE ROPE FAILURE IN TERMS OF THE ACCEPTANCE CRITERIA ESTABLISHED IN SECTION III.C (C.3.e)	1. THE MAXIMUM CABLE LOADING FOLLOWING A WIRE ROPE FAILURE IN EITHER THE MAIN OR AUXILIARY HOIST MEETS THE MAXIMUM ALLOWED BY THE ACCEPTANCE CRITERIA ESTABLISHED IN SECTION III.C (C.3.e).
C.3.f	III.C (C.3.f)	1. MAXIMUM FLEET ANGLE 2. NUMBER OF REVERSE BENDS 3. SHEAVE DIAMETER	1. 3.5 DEGREES. 2. NONE, OTHER THAN THE ONE BETWEEN THE WIRE ROPE DRUM AND THE FIRST SHEAVE IN THE LOAD BLOCK. 3. PER CMAA SPECIFICATION #70.
C.3.h	III.C (C.3.h) III.E.11	1. THE MAXIMUM EXTENT OF MOTION AND PEAK KINETIC ENERGY OF THE LOAD FOLLOWING A SINGLE WIRE ROPE FAILURE.	1. BOTH THE MAIN AND AUXILIARY HOISTS WERE DESIGNED SUCH THAT THE MAXIMUM LOAD MOTION FOLLOWING A SINGLE WIRE ROPE FAILURE IS LESS THAN 1 FOOT AND THE MAXIMUM KINETIC ENERGY OF THE LOAD IS LESS THAN THAT RESULTING FROM ONE INCH OF FREE FALL OF THE MAXIMUM CRITICAL LOAD.

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C.3.i	III.C (C.3.i)	1. THE TYPE OF LOAD CONTROL SYSTEM SPECIFIED BY THE APPLICANT.	1. EDERER AC FLUX VECTOR
		2. WHETHER INTERLOCKS ARE RECOMMENDED BY REGULATORY GUIDE 1.13 TO PREVENT TROLLEY AND BRIDGE MOVEMENTS WHILE FUEL ELEMENTS ARE BEING LIFTED AND WHETHER THEY ARE PROVIDED FOR THIS APPLICATION.	2. THE CRANE WILL NOT BE USED TO LIFT FUEL ELEMENTS FROM THE REACTOR CORE OR SPENT FUEL RACKS. THEREFORE, INTERLOCKS TO PREVENT TROLLEY AND BRIDGE MOVEMENTS WHILE HOISTING HAVE NOT BEEN PROVIDED.

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C.3.j	III.C (C.3.j)	<ol style="list-style-type: none"><li>1. THE MAXIMUM CABLE AND MACHINERY LOADING THAT WOULD RESULT IN THE EVENT OF A HIGH SPEED TWO BLOCKING, ASSUMING A CONTROL SYSTEM MALFUNCTION THAT WOULD ALLOW THE FULL BREAKDOWN TORQUE OF THE MOTOR TO BE APPLIED TO THE DRIVE MOTOR SHAFT.</li><li>2. MEANS OF PREVENTING TWO BLOCKING OF AUXILIARY HOIST, IF PROVIDED.</li></ol>	<ol style="list-style-type: none"><li>1. THE ENERGY ABSORBING TORQUE LIMITER (EATL) WAS DESIGNED SUCH THAT THE MAXIMUM MACHINERY LOAD, WHICH WOULD RESULT IN THE EVENT A TWO BLOCKING OCCURS WHILE LIFTING THE RATED LOAD AT THE RATED SPEED AND THAT ALLOWS THE FULL BREAKDOWN TORQUE OF THE MOTOR TO BE APPLIED TO THE DRIVE SHAFT, WILL NOT EXCEED 3.96 TIMES THE DESIGN RATED LOADING. IN ADDITION, THE EATL DESIGN DOES NOT ALLOW THE MAXIMUM CABLE LOADING TO EXCEED THE ACCEPTANCE CRITERIA ESTABLISHED IN SECTION III.C (C.3.e) DURING THE ABOVE DESCRIBED TWO-BLOCKINGS.</li><li>2. THE AUXILIARY HOIST HAS THE SAME X-SAM FEATURES AS THE MAIN HOIST TO PREVENT TWO BLOCKINGS AND TO PROTECT THE CRANE AND LOAD IN THE EVENT THAT ONE OCCURS.</li></ol>

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C.3.k	III.C(C.3.k)	1. TYPE OF DRUM SAFETY SUPPORT PROVIDED.	1. THE ALTERNATE DESIGN DRUM SAFETY RESTRAINT SHOWN IN FIGURE III.D.4 OF EDR-1 IS ARRANGED TO COUNTER GEAR AND BRAKE FORCES AS WELL AS DOWNWARD LOADS. THESE BRACKETS ACT ON THE INSIDE DIAMETER OF THE ENDS OF THE DRUM. THE ALTERNATE DESIGN RESTRAINT IS ALSO USED FOR THE AUXILIARY HOIST. SINCE THE OUTPUT SHAFT OF THE GEAR CASE ALSO SERVES AS THE DRUM SHAFT, THE ALTERNATE TYPE OF RESTRAINT HAS BEEN EXTENDED TO COMPLETELY ENCIRCLE THE DRUM SHELL AT BOTH ENDS.
C.3.o	--	1. TYPE OF HOIST DRIVE TO PROVIDE INCREMENTAL MOTION.	1. AC VARIABLE FREQUENCY – 5 SPEED.
C.3.p	--	1. MAXIMUM TROLLEY SPEED 2. MAXIMUM BRIDGE SPEED 3. TYPE OF OVERSPEED PROTECTION FOR THE TROLLEY AND BRIDGE DRIVES.	1. 30 FT/MIN. 2. 50 FT/MIN. 2. OVERSPEED SWITCHES ARE PROVIDED FOR BRIDGE & TROLLEY DRIVES.

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C.3.q	--	1. CONTROL STATION LOCATION	1. THE COMPLETE OPERATING CONTROL SYSTEM, INCLUDING THE EMERGENCY STOP BUTTONS, ARE LOCATED ON THE REMOTE RADIO CONTROL STATION AND THE BACKUP CRANE PENDANT STATION.
--	III.D.1	1. THE TYPE OF EMERGENCY DRUM BRAKE USED, INCLUDING TYPE OF RELEASE MECHANISM.  2. THE RELATIVE LOCATION OF THE EMERGENCY DRUM BRAKE.  3. EMERGENCY DRUM BRAKE CAPACITY.	1. PNEUMATICALLY RELEASED BAND BRAKE WILL BE USED IN EACH HOIST.  2. THE EMERGENCY DRUM BRAKE ENGAGES THE WIRE ROPE DRUM IN EACH HOIST.  3. THE MAIN HOIST EMERGENCY DRUM BRAKE HAS A MINIMUM CAPACITY OF 130% OF THAT REQUIRED TO HOLD THE DESIGN RATED LOAD.
--	III.D.2	1. NUMBER OF FRICTION SURFACES IN EATL.  2. EATL TORQUE SETTING	1. THE MAIN EATL HAS 22 FRICTION SURFACES. THE AUXILIARY HOIST EATL HAS 21 FRICTION SURFACES.  2. THE SPECIFIED EATL TORQUE SETTING IS APPROXIMATELY 130% OF THE MAIN HOIST DESIGN RATED LOAD.



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--	III.D.3	1.TYPE OF FAILURE DETECTION SYSTEM.	1. A TOTALLY MECHANICAL DRIVE TRAIN CONTINUITY DETECTOR AND EMERGENCY DRUM BRAKE ACTUATOR HAVE BEEN PROVIDED IN ACCORDANCE WITH APPENDIX G OF REVISION 3 OF EDR-1 FOR THE MAIN HOIST.
--	III.D.5	1. TYPE OF HYDRAULIC LOAD EQUALIZATION SYSTEM.	1. MAIN & AUXILIARY HOIST HYDRAULIC LOAD EQUALIZATION SYSTEMS INCLUDE BOTH FEATURES DESCRIBED IN SECTION III.D.5.
--	III.D.6	1. TYPE OF HOOK.  2. HOOK DESIGN LOAD  3. HOOK TEST LOAD	1. BOTH THE MAIN & AUXILIARY HOOKS HAVE A SINGLE LOAD PATH.  2. THE MAIN HOOK DESIGN CRITICAL LIFT LOAD IS 150 TONS WITH A 10:1 FACTOR OF SAFETY ON ULTIMATE. THE AUXILIARY HOOK DESIGN LOAD IS 25 TONS WITH A 10:1 FACTOR OF SAFETY ON ULTIMATE.  3. THE TEST LOAD FOR EACH LOAD PATH OF THE MAIN HOOK WILL BE 300 TONS MINIMUM. THE TEST LOAD FOR EACH PATH OF THE AUXILIARY HOOK WILL BE 50 TONS.

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	III.F.1	<ol style="list-style-type: none"> <li>1. DESIGN RATED LOAD.</li> <li>2. MAXIMUM CRITICAL LOAD RATING.</li> <li>3. TROLLEY WEIGHT (NET).</li> <li>4. TROLLEY WEIGHT (WITH LOAD)</li> <li>5. HOOK LIFT.</li> <li>6. NUMBER OF WIRE ROPE DRUMS</li> <li>7. NUMBER OF PARTS OF WIRE.</li> <li>8. DRUM SIZE (PITCH DIAMETER).</li> </ol>	<ol style="list-style-type: none"> <li>1. MAIN HOIST - 150 TONS AUXILIARY HOIST – 25 TONS</li> <li>2. MAIN HOIST - 150 TONS, AUXILIARY HOIST – 25 TONS</li> <li>3. 101,000LBS. (INCLUDING HOOKS).</li> <li>4. 401,000 LBS.</li> <li>5. MAIN HOOK - 54 FEET, 0 INCHES AUXILIARY HOOK – 56 FEET, 2 INCHES</li> <li>6. THE MAIN &amp; THE AUXILIARY HOISTS EACH HAVE ONE WIRE ROPE DRUM.</li> <li>7. MAIN HOIST - 8 PARTS PER WIRE ROPE. AUXILIARY HOIST – 4 PARTS PER WIRE ROPE.</li> <li>8. MAIN HOIST - 59 INCHES AUXILIARY HOIST – 21 INCHES</li> </ol>

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		9. WIRE ROPE DIAMETER	9. MAIN HOIST - 1 3/8 INCH AUXILIARY HOIST – 7/8 INCH
		10. WIRE ROPE TYPE.	10. 6x37 CLASS EEIPS/IWRC MAIN HOIST 6x37 CLASS, EIPS/WRC AUXILIARY HOIST
		11. WIRE ROPE MATERIAL.	11. CARBON STEEL MAIN HOIST & AUXILIARY HOIST
		12. WIRE ROPE BREAKING STRENGTH.	12. MAIN HOIST - 212,000 LBS. AUXILIARY HOIST – 79,600
		13. WIRE ROPE YIELD STRENGTH	13. MAIN HOIST – 169,600 LBS. AUXILIARY HOIST – 47,760
		14. WIRE ROPE RESERVE STRENGTH.	14. MAIN HOIST - .044 AUXILIARY HOIST – 0.44
		15. NUMBER OF WIRE ROPES.	15. THE MAIN AND AUXILIARY HOISTS EACH HAVE TWO ROPES.