Answers for EOI.

1. Existing design information is available. Original seismic analysis for Evaporator generated early 1970's is available from original vendor files. New calculations will be required for this scope.
2. New analysis due to reconciliation/new requirements are not anticipated. Currently drafting technical specification. Typical heat exchanger analysis required including;
    a. Thermal/Fatigue Cycle Analysis
    b. Structural/Seismic Analysis
    c. Lifting Analysis
3. Drawings of the Evaporator are P&IDs and other simplified diagrams. The "as-built" reboiler drawing has been regenerated for clarity.
4. No leak detection requirements. The scope is just for one reboiler that will need to be hydro tested.
5. No. Design requirements for reboiler are:

Shell Side Pressure:	100 psig
Tube Side Pressure:	Full Vacuum to 20 psig
Shell Side Temperature:	300 °F
Tube Side Temperature:	250 °F

6. Yes. The flow rate of the waste through the reboiler is ~ 13,000 gpm.
7. Fluid Properties are available. Below are physical characteristics. Currently compiling chemical composition.

Slurry Physical Characteristics

Parameter	Unit	Value/Range
Specific Gravity	g/ml	1.0 – 1.5
Viscosity	Centipoise (cP)	1 – 15
Temperature	°F	65-150
Thermal Conductivity[a]	W/m K	0.609
Specific Heat	J/g-deg C	0.01 - 210
pH	-	~13

8. In general, the feed is a highly-alkaline liquid (pH 13) with a specific gravity up to ~1.4. The primary chemical constituents are sodium hydroxide, sodium nitrate, sodium nitrite, sodium carbonate, sodium aluminate, and sodium sulfate. Small quantities of organic chemicals are also present.
9. Standard operating parameters of the waste (tube side) are 40 to 80 torr (absolute) pressure and 115 to 140°F temperature.
10. Reboiler will not require design for provisions for preventing solids from entering reboiler tube.