

Matter of System Energy Resources TABLE G-1

Docket No. 52-009588 Official Exhibit No. Staff 12

OFFERED by: Applicant/Licensee Intervenor

NRC Staff Other		GGNS ESP Application	Comments <sup>1</sup>
IDENTIFIED on	NEI 01-02 Parameter	PPE Table Usage (Y/N)	
Action Taken:	<del>ADMITTED</del> <del>REJECTED</del> <del>WITHDRAWN</del>		
Reporter/Clark	<del>Structures</del> <del>2.1</del>		
1.1 Building Characteristics			
1.1.1 Height		NO	SSAR 2.3.4.2 & ER 2.7.6.2: Building height assumed as zero in the X/Q calculation. Cooling tower height bounds for aesthetics impacts.
1.2 Precipitation (for Roof Design)			
1.2.1 Maximum Rainfall Rate		NO	SSAR 2.4.2.3.3.2.2 SSAR 2.4.2.3.3.2.3
1.2.2 Snow Load		NO	SSAR 2.3.1.2.4 SSAR 2.3.1.2.6
1.3 Safe Shutdown Earthquake (SSE)			
1.3.1 Design Response Spectra		NO	SSAR Figure 2.5-68
1.3.2 Peak Ground Acceleration		NO	SSAR Table 2.5-15
1.3.3 Time History		NO	SSAR 2.5.2
1.4 Site Water Level (Allowable)			
1.4.1 Maximum Flood (or Tsunami)		NO	SSAR 2.4.10
1.4.2 Maximum Ground Water		NO	SSAR 2.4.12.4
1.5 Soil Properties Design Bases			
1.5.1 Liquefaction		NO	SSAR 2.5.4.4 SSAR 3.4.1
1.5.2 Minimum Bearing Capacity (Static)		NO	SSAR 2.5.4.5.1 SSAR 2.5.4.6
1.5.3 Minimum Shear Wave Velocity		NO	SSAR 2.5.1.2.5 SSAR 2.5.4.5.1 SSAR 2.5.4.6
1.6 Tornado (Design Bases)			
1.6.1 Maximum Pressure Drop		NO	SSAR 2.3.1.4
1.6.2 Maximum Rotational Speed		NO	SSAR 2.3.1.4
1.6.3 Maximum Translational Speed		NO	SSAR 2.3.1.4
1.6.4 Maximum Wind Speed		NO	SSAR 2.3.1.4
1.6.5 Missile Spectra		NO	Spectra is defined at COL by selected reactor design. Not used at ESP for site suitability determination.
1.6.6 Radius of Maximum Rotational Speed		NO	SSAR 2.3.1.4
1.6.7 Rate of Pressure Drop		NO	SSAR 2.3.1.4

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<u>NEI 01-02 Parameter</u>	<b>GGNS ESP Application PPE Table Usage (Y/N)</b>	<b>Comments <sup>1</sup></b>
<b>1.7 Wind</b>		
1.7.1 Basic Wind Speed	NO	SSAR 2.3.1.5
1.7.2 Importance Factors	NO	Importance factors are not influenced by site conditions. Not used at ESP for site suitability determination or impacts.
<b>2. Normal Plant Heat Sink</b>		
<b>2.1 Ambient Air Requirements</b>		
2.1.1 Normal Shutdown Max Ambient Temp (1% Exceed)	NO	SSAR 2.3.1.3 & 2.3.2.1.2 SSAR Table 2.3-16, Table 2.3-17, Table 2.3-18, Table 2.3-3 See NOTE 2
2.1.2 Normal Shutdown Max Wet Bulb Temp (1% Exceed)	NO	SSAR Table 2.3-3 See NOTE 2
2.1.3 Normal Shutdown Min Ambient Temp (1% Exceed)	NO	SSAR 2.3.2.1.2 SSAR Table 2.3-3 See NOTE 2
2.1.4 Rx Thermal Power Max Ambient Temp (0% Exceed)	NO	SSAR 2.3.1.3 & 2.3.2.1.2 SSAR Table 2.3-16, Table 2.3-17, Table 2.3-18, Table 2.3-3 ER 2.7.2.2, ER Table 2.7-3 See NOTE 2
2.1.5 Rx Thermal Power Max Wet Bulb Temp (0% Exceed)	NO	SSAR Table 2.3-3 ER 2.7.2.2, ER Table 2.7-3 See NOTE 2
2.1.6 Rx Thermal Power Min Ambient Temp (0% Exceed)	NO	SSAR 2.3.2.1.2 SSAR Table 2.3-3 ER 2.7.2.2, ER Table 2.7-3 See NOTE 2
2.2 Blowdown Pond Acreage (24 hr blowdown)	NO	Not applicable for the GGNS ESP site; blowdown is directly to the MS River.
<b>2.3 Condenser</b>		
2.3.1 Max Inlet Temp Condenser/ Heat Exchanger	NO	This parameter is not needed in the PPE as it is derived from other site characteristics, primarily wet bulb temperature; and, it is driven by cooling tower design (at COL).
<b>2.4 Mechanical Draft Cooling Towers</b>		
2.4.1 Acreage	NO	ER Figure 2.2-1 & ER Table 2.2-1
2.4.2 Approach Temperature	NO	This parameter is a characteristic of cooling tower design and is not required for evaluation of impacts to the site or site suitability.
2.4.3 Blowdown Constituents and Concentrations	YES	
2.4.4 Blowdown Flow Rate	YES	
2.4.5 Blowdown Temperature	YES	
2.4.6 Cycles of Concentration	YES	
2.4.7 Evaporation Rate	YES	

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<u>NEI 01-02 Parameter</u>	<u>GGNS ESP Application PPE Table Usage (Y/N)</u>	<u>Comments <sup>1</sup></u>
2.4.8 Height	YES	
2.4.9 Makeup Flow Rate	YES	
2.4.10 Noise	YES	
<b>2.5 Natural Draft Cooling Towers</b>		
2.5.1 Acreage	NO	ER Figure 2.2-1 & ER Table 2.2-1
2.5.2 Approach Temperature	NO	See Section 2.4.2.
2.5.3 Blowdown Constituents and Concentrations	YES	
2.5.4 Blowdown Flow Rate	YES	
2.5.5 Blowdown Temperature	YES	
2.5.6 Cycles of Concentration	YES	
2.5.7 Evaporation Rate	YES	
2.5.8 Height	YES	
2.5.9 Makeup Flow Rate	YES	
2.5.10 Noise	YES	
<b>2.6 Once-Through Cooling</b>		
2.6.1 Cooling Water Discharge Temperature	NO	Once-through cooling method was eliminated due to environmental impact considerations; see Exhibit No. 1, Composite PPE Table, Footnote 3.
2.6.2 Cooling Water Flow Rate	NO	Once-through cooling method was eliminated due to environmental impact considerations; see Exhibit No. 1, Composite PPE Table, Footnote 3.
2.6.3 Cooling Water Temperature Rise	NO	Once-through cooling method was eliminated due to environmental impact considerations; see Exhibit No. 1, Composite PPE Table, Footnote 3.
2.6.4 Evaporation Rate	NO	Once-through cooling method was eliminated due to environmental impact considerations; see Exhibit No. 1, Composite PPE Table, Footnote 3.
<b>2.7 Ponds</b>		
2.7.1 Acreage	NO	The cooling pond option was eliminated due to insufficient GGNS site acreage to accommodate pond. See Exhibit No. 1, Composite PPE Table, Footnote 3.
2.7.2 Blowdown Constituents and Concentrations	NO	The cooling pond option was eliminated due to insufficient GGNS site acreage to accommodate pond. See Exhibit No. 1, Composite PPE Table, Footnote 3.
2.7.3 Blowdown Flow Rate	NO	The cooling pond option was eliminated due to insufficient GGNS site acreage to accommodate pond. See Exhibit No. 1, Composite PPE Table, Footnote 3.
2.7.4 Blowdown Temperature	NO	The cooling pond option was eliminated due to insufficient GGNS site acreage to accommodate pond. See Exhibit No. 1, Composite PPE Table, Footnote 3.

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<b><u>NEI 01-02 Parameter</u></b>	<b>GGNS ESP Application PPE Table Usage (Y/N)</b>	<b>Comments <sup>1</sup></b>
2.7.5 Cycles of Concentration	NO	The cooling pond option was eliminated due to insufficient GGNS site acreage to accommodate pond.
2.7.6 Evaporation Rate	NO	The cooling pond option was eliminated due to insufficient GGNS site acreage to accommodate pond. See Exhibit No. 1, Composite PPE Table, Footnote 3.
2.7.7 Heat Rejection Rate (Blowdown)	NO	The cooling pond option was eliminated due to insufficient GGNS site acreage to accommodate pond. See Exhibit No. 1, Composite PPE Table, Footnote 3.
2.7.8 Makeup Flow Rate	NO	The cooling pond option was eliminated due to insufficient GGNS site acreage to accommodate pond. See Exhibit No. 1, Composite PPE Table, Footnote 3.
2.7.9 Stored Water Volume	NO	The cooling pond option was eliminated due to insufficient GGNS site acreage to accommodate pond. See Exhibit No. 1, Composite PPE Table, Footnote 3.
<b>3. <u>Ultimate Heat Sink</u></b>		
<b>3.1 <u>Ambient Air Requirements</u></b>		
3.1.1 Maximum Ambient Temp (0% Exceedance)	NO	SSAR 2.3.1.1, 2.3.1.3 & 2.3.2.1.2 SSAR Table 2.3-16, Table 2.3-17, Table 2.3-18, Table 2.3-3 See NOTE 2
3.1.2 Maximum Wet Bulb Temp (0% Exceedance)	NO	SSAR 2.3.1.1, 2.3.1.3 & 2.3.2.1.2 SSAR Table 2.3-16, Table 2.3-17, Table 2.3-18, Table 2.3-3 See NOTE 2
3.1.3 Minimum Ambient Temp (0% Exceedance)	NO	SSAR 2.3.1.1, 2.3.1.3 & SSAR 2.3.2.1.2 SSAR Table 2.3-3 See NOTE 2
<b>3.2 <u>CCW Heat Exchanger</u></b>		
3.2.1 Maximum Inlet Temp to CCW Heat Exchanger	NO	This parameter is not needed as it is derived from other site characteristics, primarily wet bulb temperature, and is driven cooling tower design (at COL).
<b>3.3 <u>Mech Draft Cooling Towers</u></b>		
3.3.1 Acreage	NO	ER Figure 2.2-1 & ER Table 2.2-1
3.3.2 Approach Temperature	NO	See PPE Section 2.4.2.
3.3.3 Blowdown Constituents and Concentrations	NO	Bounded by NHS blowdown data.
3.3.4 Blowdown Flow Rate	YES	
3.3.5 Blowdown Temperature	YES	
3.3.6 Cycles of Concentration	NO	Blowdown bounded by NHS blowdown data.
3.3.7 Evaporation Rate	YES	
3.3.8 Height	NO	Bounded by NHS blowdown data.
3.3.9 Makeup Flow Rate	YES	
3.3.10 Noise	NO	Bounded by NHS blowdown data.

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<b><u>NEI 01-02 Parameter</u></b>	<b>GGNS ESP Application PPE Table Usage (Y/N)</b>	<b>Comments <sup>1</sup></b>
<b>3.4 Once-Through Cooling</b>		
3.4.1 Cooling Water Discharge Temperature	NO	As with the NHS, once-through cooling and ponds were not considered for the UHS
3.4.2 Cooling Water Flow Rate	NO	As with the NHS, once-through cooling and ponds were not considered for the UHS
3.4.3 Cooling Water Temperature Rise	NO	As with the NHS, once-through cooling and ponds were not considered for the UHS
3.4.4 Minimum Essential Flow Rate	NO	As with the NHS, once-through cooling and ponds were not considered for the UHS
<b>3.5 Ponds</b>		
3.5.1 Acreage	NO	As with the NHS, once-through cooling and ponds were not considered for the UHS
3.5.2 Blowdown Constituents and Concentrations	NO	As with the NHS, once-through cooling and ponds were not considered for the UHS
3.5.3 Blowdown Flow Rate	NO	As with the NHS, once-through cooling and ponds were not considered for the UHS
3.5.4 Blowdown Temperature	NO	As with the NHS, once-through cooling and ponds were not considered for the UHS
3.5.5 Cycles of Concentration	NO	As with the NHS, once-through cooling and ponds were not considered for the UHS
3.5.6 Evaporation Rate	NO	As with the NHS, once-through cooling and ponds were not considered for the UHS
3.5.7 Makeup Flow Rate	NO	As with the NHS, once-through cooling and ponds were not considered for the UHS
<b>4. <u>Containment Heat Removal System (Post-Accident)</u></b>		
<b>4.1 Ambient Air Requirements</b>		
4.1.1 Maximum Ambient Air Temperature (0% Exceedance)	NO	SSAR 2.3.2.1.2 SSAR 2.3.1.1 SSAR Table 2.3-3 See NOTE 2
4.1.2 Minimum Ambient Temperature (0% Exceedance)	NO	SSAR 2.3.2.1.2 SSAR 2.3.1.1 SSAR Table 2.3-3 See NOTE 2
<b>5. <u>Potable Water/Sanitary Waste System</u></b>		
<b>5.1 Discharge to Site Water Bodies</b>		
5.1.1 Flow Rate	YES	
<b>5.2 Raw Water Requirements</b>		
5.2.1 Maximum Use	YES	
5.2.2 Monthly Average Use	YES	
<b>6. <u>Demineralized Water System</u></b>		
<b>6.1 Discharge to Site Water Bodies</b>		
6.1.1 Flow Rate	YES	

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<u>NEI 01-02 Parameter</u>	<b>GGNS ESP Application PPE Table Usage (Y/N)</b>	<b>Comments <sup>1</sup></b>
<b>6.2 Raw Water Requirements</b>		
6.2.1 Maximum Use	YES	
6.2.2 Monthly Average Use	YES	
<b>7. Fire Protection System</b>		
<b>7.1 Raw Water Requirements</b>		
7.1.1 Maximum Use	YES	
7.1.2 Monthly Average Use	YES	
<b>8. Miscellaneous Drain</b>		
<b>8.1 Discharge to Site Water Bodies</b>		
8.1.1 Flow Rate	YES	
<b>9. Unit Vent/Airborne Effluent Release Point</b>		
<b>9.1 Atmospheric Dispersion (CHI/Q) (Accident)</b>		
9.1.1 0-2 hr @ EAB	NO	SSAR 2.3.4.2
9.1.2 0-8 hr @ LPZ	NO	SSAR 2.3.4.2
9.1.3 8-24 hr @ LPZ	NO	SSAR 2.3.4.2
9.1.4 1-4 day @ LPZ	NO	SSAR 2.3.4.2
9.1.5 4-30 day @ LPZ	NO	SSAR 2.3.4.2
9.2 Atmospheric Dispersion (CHI/Q) (Annual Average)	NO	SSAR Table 2.3-143
<b>9.3 Dose Consequences</b>		
9.3.1 Normal	NO	SSAR 3.2.3
9.3.2 Post-Accident	NO	SSAR 3.3
9.3.3 Severe Accidents	NO	ER 7.2
<b>9.4 Release Point</b>		
9.4.1 Configuration (Horiz vs Vert)	NO	Not needed since ground level release assumed.
9.4.2 Elevation (Normal)	YES	
9.4.3 Elevation (Post Accident)	YES	
9.4.4 Minimum Distance to Site Boundary	YES	
9.4.5 Temperature	NO	Not required; no credit taken for buoyancy of the plume.
9.4.6 Volumetric Flow Rate	NO	Not required when using ground level release.
<b>9.5 Source Term</b>		
9.5.1 Gaseous (Normal)	YES	
9.5.2 Gaseous (Post-Accident)	YES	
9.5.3 Tritium	YES	

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<u>NEI 01-02 Parameter</u>	<u>GGNS ESP Application PPE Table Usage (Y/N)</u>	<u>Comments <sup>1</sup></u>
<b>10. Liquid Radwaste System</b>		
<b>10.1 Dose Consequences</b>		
10.1.1 Normal	NO	ER 5.4.2.1 ER 5.4.4.1
10.1.2 Post-Accident	NO	SSAR 2.4.13
<b>10.2 Release Point</b>		
10.2.1 Flow Rate	YES	
<b>10.3 Source Term</b>		
10.3.1 Liquid	YES	
10.3.2 Tritium	YES	
<b>11. Solid Radwaste System</b>		
<b>11.1 Acreage</b>		
11.1.1 Low Level Radwaste Storage	NO	Not related to site suitability, no significant site impacts (small area) – COL business decision parameter.
<b>11.2 Solid Radwaste</b>		
11.2.1 Activity	YES	
11.2.2 Principal Radionuclides	YES	
11.2.3 Volume	YES	
<b>12. Spent Fuel Storage</b>		
<b>12.1 Spent Fuel Dry Storage</b>		
12.1.1 Acreage	NO	Dry fuel storage not addressed at ESP.
12.1.2 Minimum Distance to Nearest Residence	NO	Dry fuel storage not addressed at ESP.
12.1.3 Minimum Distance to Power Block	NO	Dry fuel storage not addressed at ESP.
<b>13. Auxiliary Boiler System</b>		
13.1 Exhaust Elevation	NO	Gaseous effluent releases would comply with Federal, State, and local emissions standards.
13.2 Flue Gas Effluents	YES	
13.3 Fuel Type	NO	Addressed via effluents parameter (13.2). Gaseous effluent releases would comply with Federal, State, and local emissions standards.
<b>14. Heating, Ventilation and Air Conditioning System</b>		
<b>14.1 Ambient Air Requirements</b>		
14.1.1 Non-safety HVAC max ambient temp (1% Exceed)	NO	SSAR 2.3.2.1.2 SSAR 2.3.1.1 SSAR Table 2.3-3 ER 2.7.2.2, ER Table 2.7-3 See NOTE 2



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<b><u>NEI 01-02 Parameter</u></b>	<b>GGNS ESP Application PPE Table Usage (Y/N)</b>	<b>Comments <sup>1</sup></b>
14.1.2 Non-safety HVAC min ambient temp (1% Exceed)	NO	SSAR 2.3.2.1.2 SSAR 2.3.1.1 SSAR Table 2.3-3 ER 2.7.2.2, ER Table 2.7-3 See NOTE 2
14.1.3 Safety HVAC max ambient temp (0% Exceed)	NO	SSAR 2.3.2.1.2 SSAR 2.3.1.1 SSAR Table 2.3-3 ER 2.7.2.2, ER Table 2.7-3 See NOTE 2
14.1.4 Safety HVAC min ambient temp (0% Exceed)	NO	SSAR 2.3.2.1.2 SSAR 2.3.1.1 SSAR Table 2.3-3 ER 2.7.2.2, ER Table 2.7-3 See NOTE 2
14.1.5 Vent System max ambient temp (5% Exceed)	NO	SSAR 2.3.2.1.2 SSAR 2.3.1.1 SSAR Table 2.3-3 ER 2.7.2.2, ER Table 2.7-3 See NOTE 2
14.1.6 Vent System min ambient temp (5% Exceed)	NO	SSAR 2.3.2.1.2 SSAR 2.3.1.1 SSAR Table 2.3-3 ER 2.7.2.2, ER Table 2.7-3 See NOTE 2
<b><u>15. Onsite/Offsite Electrical Power System</u></b>		
<b><u>15.1 Acreage</u></b>		
15.1.1 Switchyard	NO	SSAR 2.1.2.2 ER 2.2.1.1 ER Table 2.2-1
<b><u>16. Standby Power System</u></b>		
<b><u>16.1 Diesels</u></b>		
16.1.2 Diesel Exhaust Elevation	NO	Gaseous effluent releases would comply with Federal, State, and local emissions standards.
16.1.3 Diesel Flue Gas Effluents	YES	
16.1.4 Diesel Noise	NO	Addressed via effluents parameter (16.1.3). Gaseous effluent releases would comply with Federal, State, and local emissions standards.
<b><u>16.2 Gas Turbines</u></b>		
16.2.2 Gas-Turbine Exhaust Elevation	NO	Gaseous effluent releases would comply with Federal, State, and local emissions standards.
16.2.3 Gas-Turbine Flue Gas Effluents	YES	
16.2.4 Gas-Turbine Noise	NO	Bounded by cooling tower noise parameters.
16.2.5 Gas-Turbine Fuel Type	NO	Addressed via effluents parameter (16.2.3). Gaseous effluent releases would comply with Federal, State, and local emissions standards.

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<b>NEI 01-02 Parameter</b>	<b>GGNS ESP Application PPE Table Usage (Y/N)</b>	<b>Comments <sup>1</sup></b>
<b>17. Plant Characteristics</b>		
<b>17.1 Access Routes</b>		
17.1.1 Heavy Haul Routes	NO	ER Figure 2.2-1 & ER Table 2.2-1
17.1.2 Spent Fuel Cask Weight	NO	Not related to site suitability, nor is it required for impacts evaluations.
<b>17.2 Acreage</b>		
17.2.1 Office Facilities	NO	Acreage is included within defined construction areas. ER 1.1 ER Figure 2.2-1 ER Table 2.2-1
17.2.2 Parking Lots	NO	Acreage is included within defined construction areas. ER 1.1 ER Figure 2.2-1 ER Table 2.2-1
17.2.3 Permanent Support Facilities	NO	Acreage is included within defined construction areas. ER 1.1 ER Figure 2.2-1 ER Table 2.2-1
17.2.4 Power Block	NO	Acreage is included within defined construction areas. ER 1.1 ER Figure 2.2-1 ER Table 2.2-1
17.2.5 Protected Area	NO	Acreage is included within defined construction areas. ER 1.1 ER Figure 2.2-1 ER Table 2.2-1
17.3 Megawatts Thermal	YES	
17.4 Plant Design Life	YES	
<b>17.5 Plant Population</b>		
17.5.1 Operation	YES	
17.5.2 Refueling / Major Maintenance	NO	ER 2.5.2.1 ER 5.8.2.
<b>18. Construction</b>		
<b>18.1 Access Routes</b>		
18.1.1 Construction Module Dimensions	NO	ER 4.1.1 ER 5.3.1.1.1 Access routes used for GGNS Unit 1, barge slip and heavy haul road would be used for large loads at COL.
18.1.2 Heaviest Construction Shipment	NO	See PPE Section 18.1.1.
<b>18.2 Acreage</b>		
18.2.1 Laydown Area	NO	ER Figure 2.2-1 &

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<b><u>NEI 01-02 Parameter</u></b>	<b>GGNS ESP Application PPE Table Usage (Y/N)</b>	<b>Comments <sup>1</sup></b>
		ER Table 2.2-1
18.2.2 Temporary Construction Facilities	NO	ER Figure 2.2-1 & ER Table 2.2-1
<b>18.3 Construction</b>		
18.3.1 Noise	YES	
<b>18.4 Plant Population</b>		
18.4.1 Construction	YES	
18.5 Site Preparation Duration	NO	SSAR 1.1  [B]y this application SERI is making no commitment to the actual construction of a plant of any type on the GGNS site; rather, SERI seeks only to obtain an Early Site Permit, as allowed by 10 CFR 52, Subpart A, for the <u>potential future construction</u> of a reactor or reactors on the site.

1. This table does not list all references for all occurrences of a PPE value in a specific document.
2. Per SER (NUREG-1840) Section 2.3.1.1, Revision 0 of the SSAR presented various dry-bulb and wet-bulb temperature statistics for Jackson, Vicksburg, and the GGNS site. These statistics included 97.75 and 99 percent maximum summer exceedance dry-bulb and wet-bulb temperatures and 97.75 and 99 percent minimum winter exceedance dry-bulb temperatures. The applicant based the percentage exceedances on the summer months of June through September (2928 total hours) and the winter months of December through February (2160 total hours). In RAI 2.3.1 -5, the staff asked the applicant to provide various dry-bulb and wet-bulb temperature statistics based on annual exceedances (for example, the dry-bulb temperatures that will be exceeded no more than 2.0 and 0.4 percent of the time annually). By doing so, these data will be more consistent with the recent ASHRAE design guidelines, "2001 ASHRAE Handbook-Fundamentals," issued July 2001, for the design of heating, ventilation, air-conditioning, and dehumidification equipment.

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