Include the following information in the Preliminary Basis of Design narrative. See DCSM sections 2.1 and 2.5 for additional details.

**Instructions**:

Indicate your response to each item in the checklist. Select ‘Yes’ if the checklist item has been completed in full. Select ‘No’ or ‘N/A’ if that item is not included or not required for the specific project. Explain why that item has not been included in the submittal.

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| **RESPONSE** | **REQUIREMENTS** |
|  | **Special Mechanical Systems** |
| Choose an item. | Provide a description of any special mechanical systems such as compressed air, hydraulic, nitrogen, etc. Include an explanation of the medium source. |
|  | **Refrigeration (Cold Storage)** |
| Choose an item. | Identify areas to be refrigerated. Indicate their usage and temperatures to be maintained. |
| Choose an item. | Describe type of refrigeration equipment and systems. |
|  | **Thermal Storage** |
| Choose an item. | Describe the type of storage being considered (static or dynamic). |
| Choose an item. | Provide preliminary cooling profile. |
| Choose an item. | Provide preliminary equipment and tank sizes. |
| Choose an item. | State how the A/E proposes to conform to Commonwealth of Virginia procurement requirements when specifying thermal storage system and components. |
|  | **Heating, Ventilating, and Air Conditioning (HVAC)**  **General** |
| Choose an item. | Describe the indoor and outdoor design conditions to be used in the design of the systems for this project. Confirm that energy sources for heating and cooling systems comply with the VT CAC and DCSM. |
| Choose an item. | Provide the results of the life cycle cost and energy analysis of not less than three different types of HVAC systems. |
| Choose an item. | Provide a description of the fuel selected to be used. For new construction and for renovations where fuel sources are to be changed from current sources, confirm that fuel sources have been selected based on the lowest life cycle cost as determined by a life cycle cost and energy analysis in accord with DCSM section 1.4.3. |
| Choose an item. | Where there is a possibility of more than one source of heat energy being economical, include a computerized analysis to justify the selection. |
| Choose an item. | When computer analyses for energy conservation features are performed, include the analysis and clearly state the total annual energy consumption estimate. |
| Choose an item. | Briefly describe the controls for each system and indicate intended sequence of operation. |
| Choose an item. | Briefly describe testing and balancing requirements to be required. |
|  | **Heating, Ventilating, and Air Conditioning (HVAC)**  **Heating** |
| Choose an item. | Describe the source of heat energy to be used, and explain why this source was selected instead of other available sources. Describe the type and routing of the proposed system to convey the heat source. |
| Choose an item. | State if a condensate return system is to be utilized. If condensate is to be wasted, provide a heat reclaim study. Indicate maximum hourly production of condensate. |
| Choose an item. | Describe and/or provide schematics of the type of heating medium and system to be used within the buildings. Include reasons for selection of this system over others available. |
| Choose an item. | Describe the HVAC control system. Specify the type of control system to be used. |
|  | **Heating, Ventilating, and Air Conditioning (HVAC)**  **Ventilation** |
| Choose an item. | Indicate the quantity of outside air per person in all areas, the type of filtration, and whether OSHA requirements are applicable. |
| Choose an item. | State if smoke removal or smoke control systems are to be employed. |
| Choose an item. | Describe the operation of the system in summer and winter modes. |
|  | **Heating, Ventilating, and Air Conditioning (HVAC)**  **Air Conditioning** |
| Choose an item. | Provide a complete description and/or schematics of the air conditioning system proposed. Include an explanation of why this system is preferred over others. Indicate locations of major components of the system. For larger systems which qualify under energy conservation, provide a computerized comparison between at least two systems. |
| Choose an item. | Define areas to be air conditioned. |
| Choose an item. | Identify special humidification or dehumidification requirements. Include special filtration requirements. |
| Choose an item. | Describe any special architectural features being incorporated to reduce cooling loads. Describe any features being incorporated in the mechanical system which would reduce energy consumption. |