

## ELEMENT 10

**UTILITIES ELEMENT**

INCLUDING SUB-ELEMENTS:  
Chilled Water and Reheat Water  
Electrical Power and Other Fuels  
Telecommunications Systems

UTILITIES ELEMENT  
**CHILLED WATER SUB-ELEMENT**

**Goal 1**

**To provide heating water and chilled water to satisfy the building demands to support the mission of the University.**

**Objective 1A**

Maintain existing levels of heating and chilled water service within existing campus buildings and ensure that new buildings meet levels of service (temperatures, humidity, ventilation, etc.) required by the BOT and appropriate codes and standards as well as undertake periodic readings to verify adequate levels of heating and chilled water service.

**Policy 1A-1**

For each new building project review the program documents for reference to the FAU Professional Services Guidelines and the FAU Cost Containment Guidelines. These documents set minimum levels of service for building HVAC system design parameters. These requirements should be reviewed with the Design Professional at the start of each design project and, following the review procedures in the FAU Cost Containment Guidelines, should be checked/reviewed during the design process.

**Policy 1A-2**

For each building renovation, include a review of existing systems, including a pre test and balance of any existing HVAC system that is to be modified, to determine if the level of service provided meets the minimum levels of service required in the FAU Professional Services Guidelines and the FAU Cost Containment Guidelines.

**Policy 1A-3**

FAU shall establish and adopt a level of service standard for hot water supply which provides and maintains a minimum of 190 degrees hot water supply temperature to meet building heating demands.

**Policy 1A-4**

FAU shall establish and adopt a level of service standard for chilled water supply which provides and maintains a maximum of 45 degrees chilled water supply temperature to meet building cooling demands.

**Objective 1B**

**Ensure provision of future heating water and chilled water capacity to core campus and undertake periodic meter data readings (every 6 months) to verify adequate levels of heating and chilled water service.**

**Policy 1B-1**

Expand satellite utility plant concurrently with Master Plan expansion of new facilities. Interconnect the satellite plant with the Central Chiller Plant for growth and redundancy. This requires a utility corridor north of Lee Street from the satellite plant westward; thence crossing southward beneath Lee Street in the sleeves that were placed with the construction of Lee Street; thence southward to the Central Plant. The timing, phasing requirements and priorities for the provision of an additional satellite utility plant are high, and are established in the Capital Improvements Element.

**Policy 1B-2**

Provide a new cooling tower at the existing Central Chiller Plant. Upgrade existing cooling towers. NOTE: The need for the additional cooling tower is immediate to gain efficiencies in the plant due to soaring electricity costs and for redundancy in order to rehabilitate existing towers.

**Policy 1B-3**

Provide each new building with flow meters in the chilled water and heating water service piping. Meters shall be connected to the central control system. Periodically calibrate existing meters.

**Policy 1-B4**

Continue to upgrade control software to read and present meter data in a usable format.

**Policy 1-B5**

Perform periodic inspections of water quality and internal pipe conditions.

**Objective 1C**

**Correct existing heating water facility deficiencies.**

**Policy 1C-1**

Implement the recommendations made by consultants regarding heating water deficiencies.

**Policy 1C-2**

Replace existing heating water boilers upon failure. Existing boilers are relatively new and should not require replacement in the foreseeable future.

**Policy 1C-3**

Periodically provide and update the timing, phasing requirements and priorities for correcting existing heating water deficiencies.

**Objective 1D**

**Ensure the provision of future heating water capacity.**

**Policy 1D-1**

Study increasing system capacity when purchasing replacement heating water boilers.

**Policy 1D-2**

After adoption of the campus master plan maintain the liaison with the local gas/oil providers.

**Policy 1D-3**

Every 5 years, review the master plan with the gas/oil providers to discuss effects of campus growth on fuel supply for heating water systems.

**Policy 1D-4**

Where is not practical to bring central heating water (for reheat and hot water) the proposed facility shall include an independent boiler system, appropriately sized for its needs.

**Objective 1E**

**Correct existing chilled water facility deficiencies.**

**Policy 1E-1**

**Annually create a list of chilled water system deferred maintenance items. Accomplish these items where feasible, through performance contracting.**

**Policy 1E-2**

The Satellite Plant shall be expandable to eventually serve the future facilities at the Schmidt Bio-medical complex, the proposed College of Engineering and all other buildings located north and east of the campus core as shown in the Master Plan. Plant shall have recommended redundancy.

**Policy 1E-3**

Periodically, commission consulting engineers to study the performance and capacity of the existing systems and make recommendations towards added efficiency and replacements.

**Policy 1E-4**

Where practical, alter the transport system capacity so as to most economically share the chilled water load among the loops and to allow for the satellite tie-in, as required.

**Policy 1E-5**

No longer used – work completed.

**Policy 1E-6**

Replace 3-way bypass control valves in existing buildings with 2-way pressure independent valves. Use VFD's on tertiary pumps to minimize energy usage and over pressurization of piping.

**Policy 1E-7**

Periodically provide and update the timing, phasing requirements and priorities for correcting existing chilled water deficiencies.

**Objective 1F**

**Ensure the provision of future chilled water capacity.**

**Policy 1F-1**

Interconnect new and existing chilled water distribution systems and install valving to zone distribution of cooling water. See Policy 1A-1.

**Policy 1F-2**

As new buildings are constructed, use two way pressure independent control valves, not 3 way control valves, to take advantage of system design to produce best energy savings through high differences in chilled water temperature.

**Policy 1F-3**

As new buildings are constructed, connect them to the chilled water distribution system using a decoupled piping arrangement, to promote uniformity in the system operating characteristics.

**Policy 1F-4**

When it is not practical to bring central chilled water, the proposed facility shall include an independent cooling system, appropriately sized for its needs.

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UTILITIES ELEMENT  
**ELECTRICAL POWER & OTHER FUELS SUB-ELEMENT**

**Goal 2**

**To accommodate existing and future FAU needs for electric power and other fuels.**

**Objective 2A**

**Maintain existing levels of electrical service within existing campus buildings and ensure that new buildings meet levels of service required by the Board of Governors, Regents and appropriate codes and standards.**

**Policy 2A-1**

For each new building project review the program documents for reference to the FAU Professional Services Guidelines and the FAU Cost Containment Guidelines. These documents set minimum levels of service for electrical system design parameters. These requirements should be reviewed with the Design Professional at the start of each design project and, following the review procedures in the FAU Cost Containment Guidelines, should be checked/reviewed during the design process.

**Policy 2A-2**

For each building renovation, include a review of existing systems to determine if the level of service provided meets the minimum levels of service required in the FAU Professional Services Guidelines and the FAU Cost Containment Guidelines.

**Objective 2B**

**Correct existing power deficiencies.**

**Policy 2B-1**

Continue to upgrade deficient wiring systems, as necessary.

**Policy 2B-2**

Periodically check tunnels and areaways for any deficiencies, “hot-spots” in primary distribution cables, or other problem conditions, and report and correct such deficiencies.

**Policy 2B-3**

Periodically provide and update the timing and phasing requirements and priorities for correcting existing electrical power deficiencies.

**Objective 2C**

**Ensure the safe provision of future power for FAU.**

**Policy 2C-1**

As new buildings are added, consider the load on all feeders in planning for new loads/system modifications in the core campus and the extended campus to the north and northeast.

**Policy 2C-2**

Extend the campus power grid as required to supply the power needs of all future development as shown on the Master Plan.

**Policy 2C-3**

Maximize the shared distribution of all existing feeders.

**Policy 2C-4**

Continue to implement recommendations for emergency power for hurricane/disaster operation on campus. Include study of need for emergency power to maintain minimum campus operations in the event of power outages. Recommendation should include size and location for new or replacement back-up power generators.

**Policy 2C-5**

No longer used.

**Objective 2D**

**Maintain a liaison with Florida Power and Light Company (FPL).**

**Policy 2D-1**

Periodically, review the master plan with FPL to discuss effects of campus growth on FPL.

**Policy 2D-2**

Plan and negotiate the routing of new power feeds to provide additional power and redundancy to the core campus as well as the expanding north and west ends.

**Objective 2E**

**Consider alternate fuels and alternate sources of energy.**

**Policy 2E-1**

Remain open and objective to alternative energy sources and methods of power generation, where appropriate. Study the feasibility and funding sources for alternate power demonstrations on campus.

**Policy 2F-1**

Feeder/backbone medium volt (mv) extensions and pull-offs will be made through 15kv switch cabinets.

UTILITIES ELEMENT

**TELECOMMUNICATIONS SUB-ELEMENT**

**Goal 3**

To provide "State of the Art" voice, video, distance learning, and data systems throughout the Campus.

**Objective 3A**

Maintain appropriate levels of service within existing campus buildings and ensure that new buildings meet levels of service required by the Board of Trustees, The IRM Specification, and applicable codes and BICSI standards.

**Goal 4**

Design and install the campus voice, data, video and distance learning transport systems to support future growth and new technologies in accordance with the most recent version of the IRM Specification.