

Contact: Joan Racki

**REGISTER OF UNIVERSITY OF IOWA**  
**CAPITAL IMPROVEMENT BUSINESS TRANSACTIONS**

**Actions Requested:** Consider recommending approval of:

1. Authorization to proceed with project planning, including the design professional selection process, for the **Power Plant - Air Regulation Compliance** project.
2. The following actions for the **UIHC – Pediatric Cardiac Catheterization Laboratory Relocation / Expansion and Level 3 - 6 John Pappajohn Pavilion Connectors to UI Children’s Hospital** and **UIHC Centralized Emergency Power Generation Facility** projects, major capital projects as defined by Board policy:
  - a. Acknowledge receipt of the University’s final submission of information to address the Board’s capital project evaluation criteria (see Attachment A for Pediatric Cardiac Catheterization and Attachment B for Emergency Power);
  - b. Accept the Board Office recommendation that the projects meet the necessary criteria for Board consideration; and
  - c. Approve the schematic designs, and project descriptions and budgets (\$11,348,700 for Pediatric Cardiac and \$23,000,000 for Emergency Power), with the understanding that approval will constitute final Board approval and authorization to proceed with construction.
3. The project description and budget (\$5,625,100) for the **Oakdale Chilled Water Plant – Capacity Upgrades** project.

**Executive Summary:**

The University requests permission to proceed with project planning for the **Power Plant – Air Regulation Compliance** project, which would install the most cost-effective equipment options to meet the new, more stringent federal emissions requirements (Boiler MACT [Maximum Achievable Control Technology] and NAAQS [National Ambient Air Quality Standards]) for the steam generating boilers at the Main Power Plant. The regulations require compliance by January 31, 2016. The estimated project cost of \$9 million would be funded by utility system revenue bond proceeds. (The location of the power plant is shown on Attachment C.)

The University requests approval of the schematic design and project description and budget (\$11,348,700) for the **Pediatric Cardiac Catheterization Laboratory Relocation / Expansion and Level 5 & 6 John Pappajohn Pavilion Connector to UI Children’s Hospital** project, which would relocate and expand from one to two laboratories at the Pediatric Cardiac Catheterization (cath) facilities. The project would also infill a recessed area on the west façade of the Pappajohn Pavilion on levels 3 through 6 to provide adequate space for development of the cath labs on level 5, to connect the Neonatal Intensive Care Unit to the skybridge on level 6 (which will connect the new Children’s Hospital with the Pappajohn Pavilion), and to provide for shell space for clinical and support functions on levels 3 and 4. The project would be funded by University Hospitals Building Usage Funds. The schematic design booklet is included with the Board’s agenda materials.

The University requests approval of the schematic design and project description and budget (\$23,000,000) for the **UIHC Centralized Emergency Power Generation Facility** project. The project would develop an off-site centralized emergency power generation facility to provide emergency power service to UIHC's main campus. Installation of the off-site generator facility will support the immediate emergency power generation needs of the UI Children's Hospital and below-grade Hospital Parking Ramp 2 replacement facility, both of which are now under construction, as well as a portion of John Pappajohn Pavilion. The project would be funded by University Hospitals Building Usage Funds.

The Joint Commission on Accreditation of Healthcare (JCAHO) is requiring UIHC to increase emergency generator capacity that is dedicated to UIHC use. The emergency generator capacity cannot be shared with non-hospital operations. Due to current ambient air quality regulations, UIHC must install the new emergency generator(s) away from the main UIHC campus. The project location is an undeveloped site adjacent to the northwest corner of the Finkbine Commuter Parking Lot. (See Attachment D for the location and the schematic design.)

The University requests approval of the project description and budget (\$5,625,100) for the **Oakdale Chilled Water Plant – Capacity Upgrades** (formerly known as the Oakdale Utility Power Plant – Connect Utility Services to Biomedical Research Support Facility) project, which would improve the reliability and redundancy of the University's Research Campus chilled water services for the critical facilities located on the campus by extending chilled water lines to the State Hygienic Laboratory (SHL), connecting campus chilled water to the SHL chillers, and adding chiller capacity at the Oakdale Utility Power Plant. The project would be funded by utility system renewal and improvement funds. (A map showing the location of the proposed project is included as Attachment E.)

**Details of the Projects:**

**Power Plant – Air Regulation Compliance**

Project Summary

	<u>Amount</u>	<u>Date</u>	<u>Board Action</u>
Permission to Proceed with Project Planning		Apr. 2014	Requested

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The University has explored a number of alternatives that would allow the Main Power Plant boilers to meet the new emission limits. These include sorbent injection of materials into the boiler flu gas, wet and dry flu gas scrubbers, as well as electrostatic precipitator (ESP) vs. bag house technologies – all to capture the emission components that have been newly regulated to stricter levels. Sorbent injection and a new bag house appear to provide the best combination of installation cost, operating/maintenance cost and operational flexibility with various fuels (including biomass).

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**UIHC – Pediatric Cardiac Catheterization Laboratory Relocation / Expansion and Levels 3 - 6 John Pappajohn Connectors to UI Children’s Hospital**

Project Summary

	<u>Amount</u>	<u>Date</u>	<u>Board Action</u>
Permission to Proceed with Project Planning		Sept. 2013	Approved
Initial Review and Consideration of Project Evaluation Criteria		Sept. 2013	Received Report
Selection of Construction Manager (Gilbane Building Company; Chicago)		Sept. 2013	Approved
Design Professional Agreement (Invision Architecture; Des Moines)	\$ 570,800	Feb. 2014	Not Required*
Schematic Design		Apr. 2014	Requested
Project Description and Budget	11,348,700	Apr. 2014	Requested
Final Review and Consideration of Project Evaluation Criteria		Apr. 2014	Receive Report

\*Approved by Executive Director, consistent with Board policies

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The current pediatric cardiac catheterization facilities, which are located on level 2 of the Pappajohn Pavilion, include a single cardiac catheterization laboratory and support facilities. The proposed project is needed to accommodate an increase in pediatric cardiac catheterization and electrophysiology procedures, and to position the new laboratories in space immediately adjacent to and physically linked via a connecting walkway with the new pediatric operating room suite that will be located on level 5 of the new Children’s Hospital. This adjacency will facilitate the sharing of resources that will be required by both the operating room and cath lab, including patient preparation and recovery facilities, thereby reducing operating costs and improving operating flexibility.

The project will also provide for an expansion of the existing level 6 John Pappajohn Pavilion (JPP) Neonatal Intensive Care Unit (NICU) bays to accommodate enhancements to this unit’s facilities, with a connecting walkway between this unit and the new level 6 NICU facilities to be developed as part of the UI Children’s Hospital project. The project will also provide for development of replacement offices for Anesthesia faculty who are currently located in a portion of the area that will be used for development of the new Pediatric Catheterization Laboratories.

The project also includes infilling portions of the west facade of JPP on levels 3 and 4. These infills, which will be directly below those to be developed on levels 5 and 6, will provide needed additional space for optimally developing the new UI Heart and Vascular Center Clinic and Non-Invasive Diagnostic Laboratories that will be constructed as a separate project on level 4 JPP and for future expansion of the Department of Radiology clinical and support facilities on level 3 JPP to meet faculty office and other space needs.

The following summarizes the square footage included in the program and schematic design of the project:

<u>Function</u>	<u>Square Footage (NASF*)</u>
Pediatric Cath Labs & Control Rooms	2,070
Patient Care Areas	1,574
Utility & Clinical Support	501
Offices & Staff Workstations	783
Equipment & Storage	814
3 <sup>rd</sup> Level Infill (Future Radiology Clinical and Support Facilities)	2,498
4 <sup>th</sup> Level Infill (UI Heart & Vascular Center Facilities)	<u>1,660</u>
TOTAL	9,900

\*NASF – net assignable square feet

Project Budget

Construction	\$8,776,600
Planning, Design & Management	1,552,700
Contingency	<u>1,019,400</u>
TOTAL	<u>\$11,348,700</u>

Construction is scheduled to begin in the third quarter of FY 2015 with completion during the second quarter of FY 2016.

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**UIHC – Centralized Emergency Power Generation Facility**

Project Summary

	<u>Amount</u>	<u>Date</u>	<u>Board Action</u>
Permission to Proceed with Project Planning		Sept. 2013	Approved
Initial Review and Consideration of Capital Project Evaluation Criteria		Sept. 2013	Received Report
Utilization of Construction Manager		Sept. 2013	Approved
Design Professional Agreement – Preliminary Design AEI (Dallas, TX)	\$ 220,000	Feb. 2014	Not Required*
Schematic Design		Apr. 2014	Requested
Project Description and Budget	23,000,000	Apr. 2014	Requested
Final Review and Consideration of Capital Project Evaluation Criteria		Apr. 2014	Receive Report

\*Approved by Executive Director, consistent with Board policies

The proposed, off-site centralized emergency power generation facility would be scalable to handle UIHC’s emergency power generation needs as additional emergency power is required. The facility would be designed to mitigate the risk of a catastrophic loss of emergency power due to a tornado, power grid failure, or other circumstances. An underground duct bank will connect the generator facility with UIHC facilities.

The redundancy of the emergency power supply would also be improved by development of this facility. Distributing emergency power generation from a location physically removed from the main UIHC campus would improve the survivability of emergency power service in the event of a tornado or other localized catastrophic disruptions. The location would also support the University’s air quality goals and would ensure that Environmental Protection Agency (EPA) air dispersion modeling requirements are met.

The emergency generator, which would provide up to 7.5 megawatts of emergency power, will be housed in an approximate 7,000 gross square foot facility located adjacent to the northwest corner of the Finkbine Commuter Parking Lot. The structure would consist of concrete, brick, and glazing with visible metal louvers and exterior metal personnel doors. While the structure will be visible from the northeast quarter of the Finkbine Golf Course and from the Finkbine Commuter Parking Lot, it will be an isolated structure over 900 feet from Electrical Substation “U”, its nearest neighbor. Native trees will be planted between the structure and the Finkbine Golf Course to minimize the visual impact of the structure to the golf course users.

<u>Project Budget</u>	
Construction	\$18,400,000
Planning, Design & Management	2,760,000
Contingency	<u>1,840,000</u>
<b>TOTAL</b>	<b><u>\$23,000,000</u></b>

Source of Funds: University Hospitals Building Usage Funds

Construction is scheduled to commence in the fourth quarter of FY 2014, with completion anticipated during the second quarter of FY 2016.

**Oakdale Chilled Water Plant – Capacity Upgrades  
(formerly known as Oakdale Utility Power Plant – Connect Utility Services to Biomedical  
Research Support Facility)**

Project Summary

	<u>Amount</u>	<u>Date</u>	<u>Board Action</u>
Permission to Proceed with Project Planning Design Professional Agreement (PRVN Consultants, Muscatine)	\$ 450,000	Aug. 2013 Nov. 2013	Approved Not Required*
Project Description and Budget	5,625,100	Apr. 2014	Requested

\*Approved by Executive Director, consistent with Board policies

This project involves the extension of approximately 1,900 lineal feet of campus chilled water lines to the State Hygienic Laboratory (SHL), connection of campus chilled water to the SHL chillers, transfer of operation and control of the SHL chillers to the campus system and installation of additional chillers in the Oakdale Chilled Water Plant for additional production capacity (440 ton+/-). This project includes controls system upgrades at SHL as well as the addition of one packaged cooling tower cell, two chilled water distribution pumps, one hot water secondary pump, one condenser water pump and associated piping, and instrumentation systems.

Project Budget

Construction	\$4,500,000
Planning, Design & Management	675,012
Contingency	<u>450,008</u>
TOTAL	<u>\$5,625,100</u>

Source of Funds: Utility System Renewal and Improvement Funds

UIHC – Pediatric Cardiac Catheterization Laboratory Relocation / Expansion and  
Level 3-6 John Pappajohn Pavilion Connectors to UI Children’s Hospital  
Evaluation Criteria

Since the project meets the Board’s definition of a major capital project, the University has provided the following information in response to the Board’s evaluation criteria.

Institutional Mission / Strategic Plan: Completion of this project will contribute to UI Hospitals and Clinics’ efforts in meeting all elements of the UI Health Care mission, “Changing Medicine, Changing Lives.” It will greatly enhance the UI Hospitals’ capabilities for delivering superb patient care, innovative educational programs and facilitating pioneering discoveries. The project is also supportive of each of the six major goals that have been established in UI Health Care’s Strategic Plan for FY 2014-2016 by providing the facilities that are required to assist UI Health Care’s efforts: 1) to provide world class healthcare services to optimize health for everyone, 2) to advance world class discovery through excellence and innovation in biomedical and health services research, 3) to develop world class health professionals and scientists through excellent, innovative and humanistic educational curricula for learners at every stage, 4) to foster a culture of excellence that values, engages and enables our workforce, 5) to create an environment of inclusion where individual differences are respected and all feel welcome, and 6) to optimize a performance-driven business model that assures financial success.

The relocated and expanded pediatric cardiac catheterization laboratories support UIHC’s Strategic Facilities Master Plan by accommodating an increased volume of pediatric cardiac catheterization and electrophysiology patients who require very advanced and specialized procedures. The location of the new laboratories will reduce operating costs by facilitating the sharing of common resources between the new labs and the new Children’s Hospital. The close proximity will provide for improved access to the pediatric operating rooms in the new Children’s Hospital, thereby enhancing patient safety by affording shortened transport from the catheterization laboratories to the pediatric operating rooms should an emergency arise during the performance of a pediatric catheterization procedure.

Other Alternatives Explored: Alternate locations were explored for the pediatric cardiac catheterization laboratories, including placing them in either the operating room suite on level 5 of the new Children’s Hospital or in the imaging suite on lower level 2 of this new building. Space was not adequate within the level 5 operating room suite to accommodate these laboratories. The physical separation between lower level 2 and the operating room suite did not allow for maximum patient safety should an event occur within a catheterization laboratory that would require expedited transport of the patient to the operating room suite. On level 5 of the John Pappajohn Pavilion, without construction of the west façade infill area it was determined there would not be adequate space to accommodate the laboratories without significantly disrupting other clinical and support functions currently located on this level. On level 6, omission of the infill area would result in the elimination of one high risk antepartum room and would require an access corridor through the existing Labor and Delivery Suite, which would not be acceptable from a patient safety perspective and would negatively impact the operations and efficiency of the Labor and Delivery Suite.

Impact on Other Facilities and Square Footage: No space will be abandoned as a result of this project. The Departments of Anesthesia and Nursing offices and support facilities that are now located in the project area on level 5 JPP, will be relocated to replacement facilities that will be developed in shell space currently under construction on levels 7 and 8 of the John Colloton and John Pappajohn Pavilions. The current Pediatric Cardiac Catheterization Laboratory space on level 2 JPP will be used to expand the Pediatric Specialty Clinic.

Financial Resources for Construction Project: This project will be funded through University Hospitals Building Usage Funds acquired from depreciation allowances of third parties underwriting the cost of patient care plus hospital net earnings from paying patients. No state capital appropriated dollars will be involved.

Financial Resources for Operations and Maintenance: The source of funds to cover the associated operating and maintenance costs will be hospital operating revenues derived from providing patient care services.

External Forces Justifying Approval: The project will respond to the continued growth in pediatric cardiac catheterization patient volume. Patient care and safety will be enhanced through expanded facilities that support greater operational efficiencies and a robust infection control regimen. The development of these facilities adjacent to the new UI Children's Hospital responds to the continued emphasis on identifying mechanisms for improving the efficiency, cost effectiveness and safety of highly sophisticated patient care units.

The project's design will meet all building codes and standards, as well as the most recently published 2010 Edition of the Guidelines for Design and Construction of Hospital and Healthcare Facilities, published by the Facility Guidelines Institute. These guidelines regulate hospital licensing and construction in Iowa and most other states and are used by Medicare and the Joint Commission to develop new regulations and standards. The design will also meet Health Insurance Portability and Accountability Act (HIPAA) requirements for patient privacy and confidentiality.

UIHC Centralized Emergency Power Generation Facility  
Evaluation Criteria

Since the project meets the Board's definition of a major capital project, the University has provided the following information in response to the Board's evaluation criteria.

Institutional Mission / Strategic Plan: Completion of this project will contribute to UI Hospitals and Clinics' efforts in meeting all elements of the UI Health Care mission, "Changing Medicine, Changing Lives." It will greatly enhance the UI Hospitals' capabilities for delivering superb patient care, innovative educational programs and facilitating pioneering discoveries. The project is also supportive of each of the six major goals that have been established in UI Health Care's Strategic Plan for FY 2014 - 2016 by providing the facilities that are required to assist UI Health Care's efforts: 1) to provide world class healthcare services to optimize health for everyone, 2) to advance world class discovery through excellence and innovation in biomedical and health services research, 3) to develop world class health professionals and scientists through excellent, innovative and humanistic educational curricula for learners at every stage, 4) to foster a culture of excellence that values, engages and enables our workforce, 5) to create an environment of inclusion where individual differences are respected and all feel welcome, and 6) to optimize a performance-driven business model that assures financial success.

The development of a Centralized Emergency Power Generation Facility supports UIHC's Strategic Facilities Master Plan by providing an avenue through which UIHC can improve the reliability and redundancy of its back-up power supply while also providing a long-term opportunity to increase back-up power generation capacity and permit the needed flexibility for future expansion of hospital programs. Additionally, the decision to place the generator facility at a remote location will remove a potential emissions source from the area immediately surrounding the existing UIHC facilities and supports the University's broader goal of reducing air pollutant concentrations across the campus.

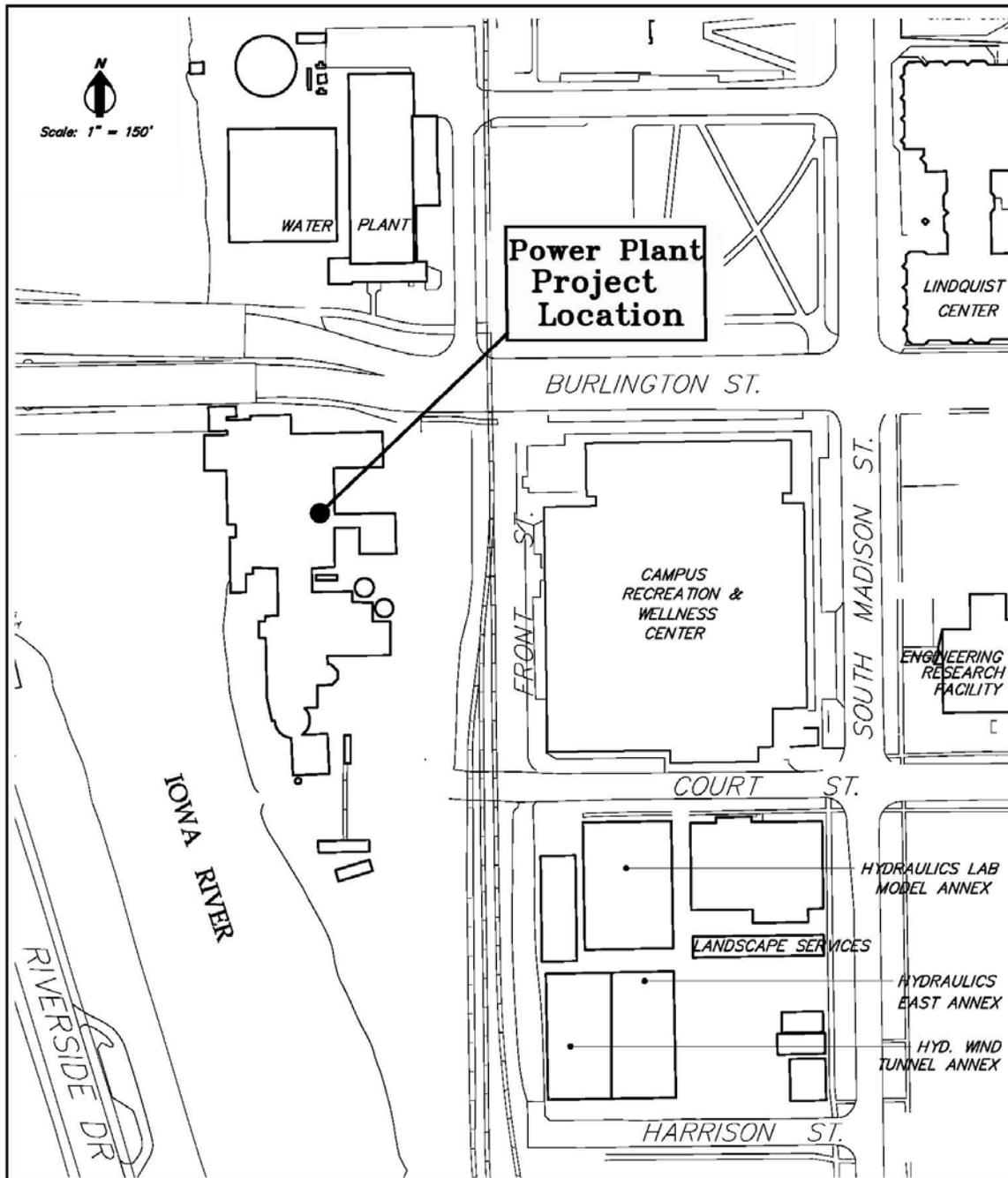
Other Alternatives Explored: Lower level 2 of the new Children's Hospital, as well as Lower level 2 of Pomerantz Family Pavilion, were both initially explored as possible locations for the emergency generators. However, dispersion modeling analysis suggested that generator placement anywhere within the UIHC facilities could not feasibly meet EPA air quality requirements. Additionally, refitting/rebuilding of ageing units was considered. While this option would likely improve the long-term reliability of the ageing units, it does not address long term air quality goals and is not possible due to the size limitations of existing emergency generator transformer facilities.

Impact on Other Facilities and Square Footage: The project will not result in the demolition of existing space but will permit the future transfer or replacement of existing emergency generators to the new off-site facility for the reasons identified above. At that time the space on UIHC's main campus now used for emergency generator systems will be reassigned for use in meeting the needs of other systems required to support UIHC's infrastructure.

Financial Resources for Construction Project: This project will be funded through University Hospitals Building Usage Funds acquired from depreciation allowances of third parties underwriting the cost of patient care plus hospital net earnings from paying patients. No state capital appropriated dollars will be involved.

Financial Resources for Operations and Maintenance: The source of funds to cover the associated operating and maintenance costs will be hospital operating revenues derived from providing patient care services.

External Forces Justifying Approval: In January, 2013, the Iowa DNR adopted new more stringent National Ambient Air Quality Standards. To meet these standards, initial engineering studies indicate that the optimal location for installation of additional emergency electrical generators will be away from the main UIHC campus. For these reasons, it is proposed that a remote centralized emergency power generator facility be developed that could accommodate the UIHC's current and future back-up electrical power requirements.



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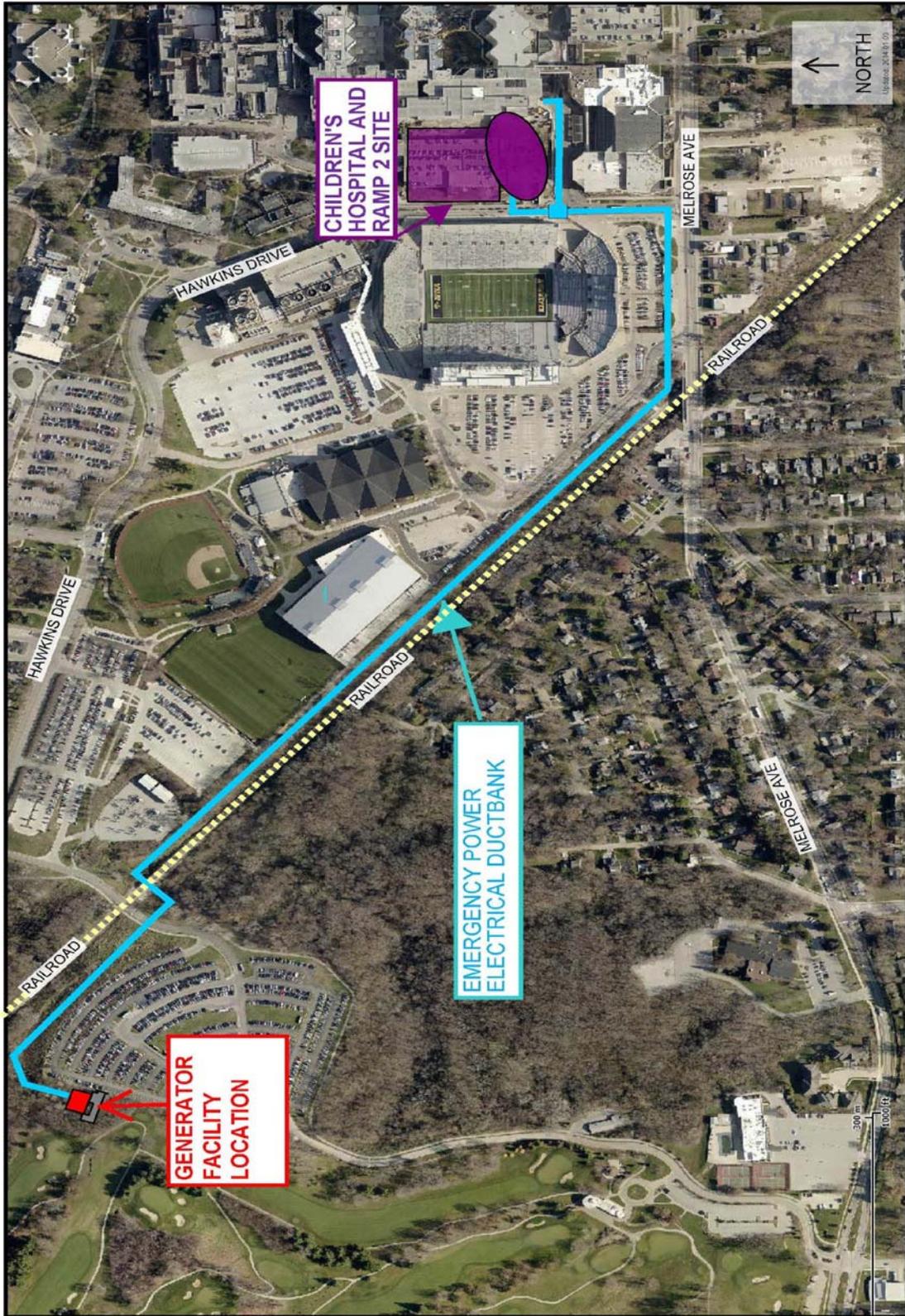
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Plotted: August 30, 2013

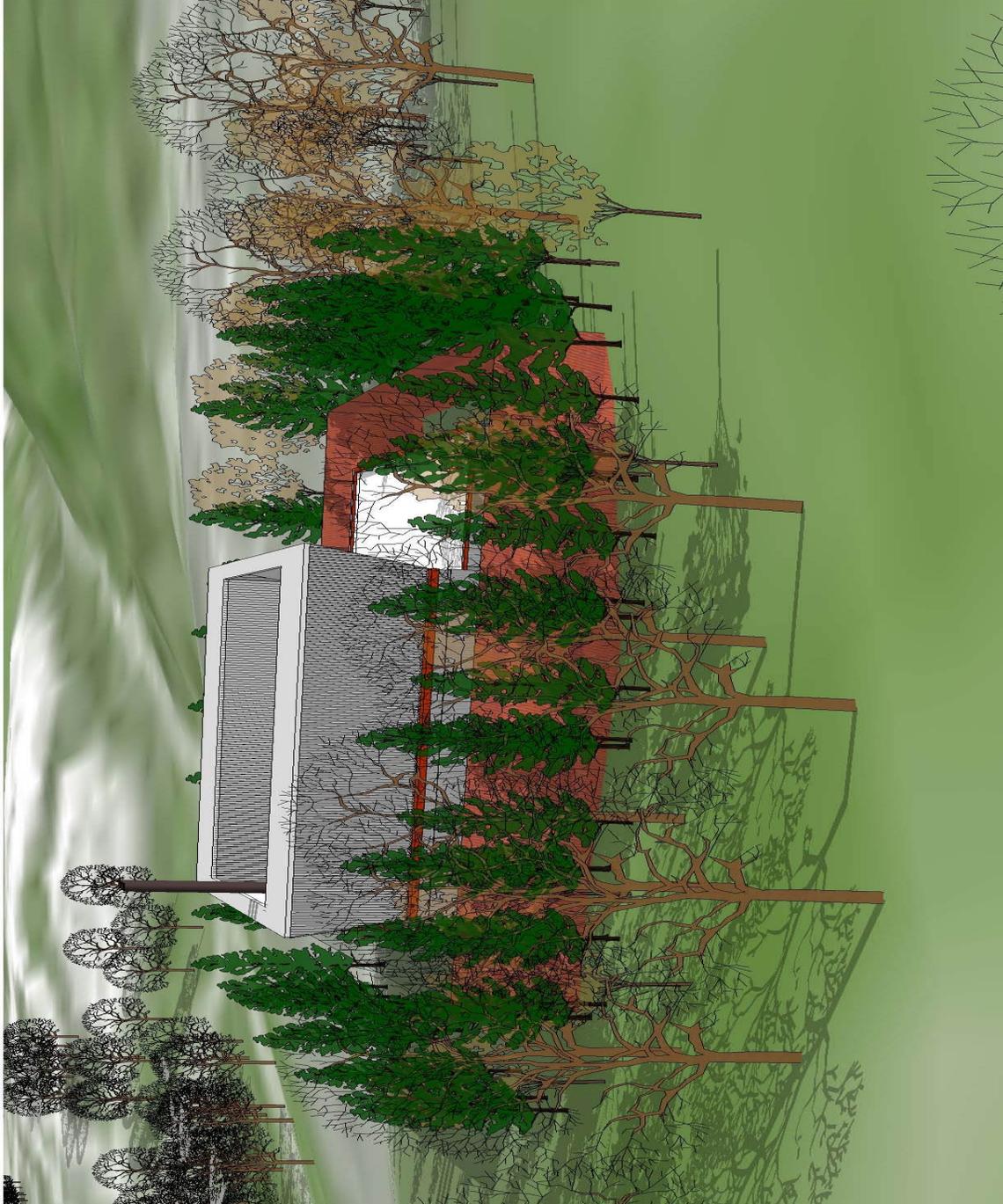
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Location Map:

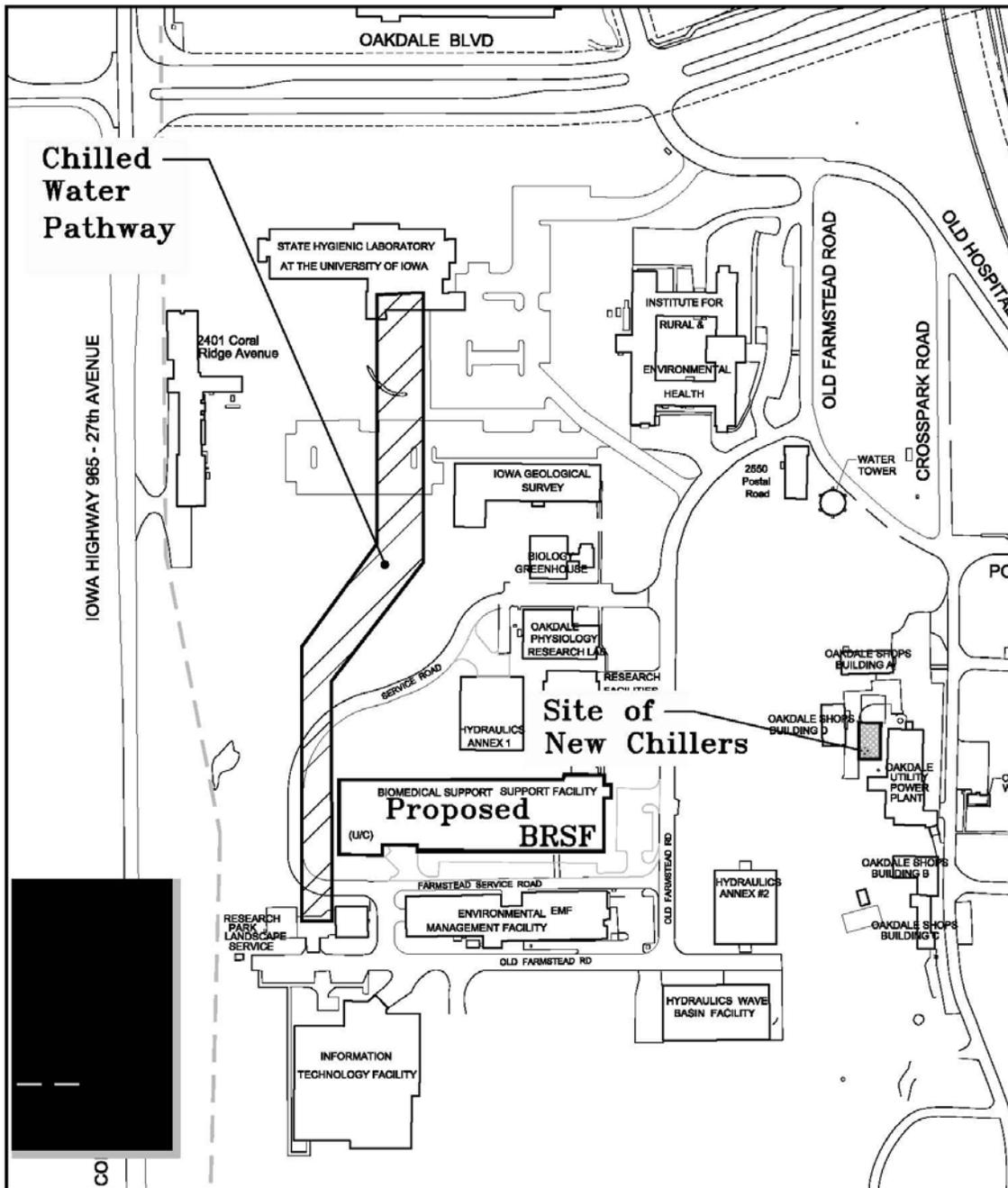
Power Plant -  
Air Regulations Compliance



Centralized Emergency Power Generation Facility



Generator Facility Location



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LOCATION MAP  
**Oakdale Chilled Water Plant-  
Capacity Upgrades**