DESCRIPTION

SITE
Site Approval
Storm Water Discharge Permit
Environmental Review and Documentation
Tree Protection and Removal Process
  Tree Evaluation
  Tree Rating Definitions
  Tree Removal Permit Protocol
Road Closure Procedures
Utility Systems Memo of Understanding
Utilities Design Checklist
Utilities Construction Checklist
Utilities Final Acceptance Checklist
A&E Internal Utility Shut Down Protocol
O&M Utility Shut Down Process
Utility Shut Down Process Flowchart

CODES AND STANDARDS
Radiation Source Acquisition Protocol
MOU State Fire / UC
Code In Effect
Request for Alternative Method of Design

LABORATORY
Bio-safety Laboratories
Laboratory Clearance

UNIVERSITY REVIEW
Regents Design Review
  Independent Design & Cost
  Independent Seismic
  Animal Facility Design
  Others
Round Table Reviews
Preconstruction Meeting

CLOSEOUT
Substantial Completion Letter
Certificate of Occupancy
Landscape Acceptance Letter
Warranty Phase Flowchart

OTHERS
Lactation Rooms
Student Housing
DESCRIPTION
Administrative Requirements of the Campus Standards & Design Guide provides an overview of
the campus internal processes that are involved in a typical capital project. Since these processes
are intended for campus internal use, this section of the Campus Standard & Design Guide is only
accessible to campus representatives. These processes are frequently updated, they are
maintained on the A&E Website.

SITE
SITE APPROVAL
The University has been delegated the authority to approve the project sites that are in general
accordance with an approved Long-Range Development Plan (LRDP). The Regents must approve
sites that are not in accordance with the LRDP.

STORMWATER DISCHARGE PERMIT
The storm water permit for municipal discharges that covers the campus requires implementation
of procedures and development principles that will protect storm water after construction is
completed. The CS&DG requires structural Best Management Practices (BMPs) to reduce
pollutants after construction of the project is completed. In addition, the Campus shall develop
and implement strategies and controls that prevent pollution of storm water runoff and ensure
adequate long-term operation and maintenance of BMPs.

ENVIRONMENTAL REVIEW AND DOCUMENTATION
Environmental documentation begins during project planning phases, when projects are classified
by their probable impact and need for environmental documentation. Facilities must prepare
environmental documentation for all projects. A project may fall within the general exemption,
may be categorically exempt, or may require an Initial Study to determine the severity of its
impacts. The Initial Study identifies areas of environmental concern and is used to assess
whether potential impacts are significant and require the preparation of an Environmental Impact
Report (EIR), or if not significant, a Negative Declaration is prepared instead.

If potential impacts are significant, a full EIR is prepared, usually with the assistance of outside
consultants; this process includes publication and public review of a draft EIR and a public
hearing. The final EIR is then prepared, also with the assistance of outside consultants. The final
EIR responds to all comments received in writing and at the public hearing during the review
period. It also proposes measures designed to mitigate significant environmental impacts and a
program for monitoring these mitigation measures. The environmental documentation must be
reviewed and approved by either The Regents or the Chancellor before a project is approved. For
projects with a total cost of over $5 million, The Regents must certify environmental
documentation prior to design approval.

The campus shall include in construction contracts for large construction projects near receptors,
the following control measures:

1. Limit traffic speeds on unpaved roads to 15 mph.
2. Install sandbags or other erosion control measures to prevent silt runoff to public
   roadways from sites with a slope greater than one percent. Refer to Division 1, Storm
   Water Pollution Prevention for additional requirements.
3. Limit area subject to excavation, grading, and other construction activity at any one time.
The campus shall implement the following control measures to reduce emissions of ozone precursors from construction equipment exhaust:

1. To the extent that equipment is available and cost effective, the campus shall encourage Contractors to use alternate fuels and retrofit existing engines in construction equipment.
2. Minimize idling time to a maximum of 5 minutes when construction equipment is not in use.
3. To the extent practicable, manage operation of heavy-duty equipment to reduce emissions.

**TREE PROTECTION AND REMOVAL PROCESS**

**TREE EVALUATION**

1. Before a project is approved under the 2003 LRDP, the campus will perform a tree survey of the project site. Grounds, the Office Resource Management and Planning, and the Office of Architects and Engineers will provide input about tree classifications and will modify project design to avoid important trees if feasible.
2. Grounds (with tree survey group) surveys trees and prepares a report that shows trees and indicates importance of trees.
3. OORMP reviews Tree Evaluation Review and resolves any disagreements and/or potential building conflicts with Grounds.
4. OORMP includes Tree Evaluation Review in PPG Abstract, with resolution about any potential conflicts.
5. A&E reviews Tree Evaluation Review and resolves any disagreements and/or potential building conflicts with Grounds and OORMP.
6. Grounds is involved during DPP development to update Tree Evaluation Review.
7. DPP will include the Tree Evaluation Review.
8. If a project would necessitate removal of a Specimen Tree, the project would relocate the tree if feasible, or would replace the tree with the same species or species of comparable value (relocation or replacement should occur within the project area if feasible). This would reduce the impact to a less-than-significant level.
9. If it is determined during the design phases that a project cannot avoid a #1 tree, per current tree permit protocol, the Associate Vice Chancellor of O&M would make final determination. (If definitions of special trees are updated, FEPC approval might be necessary to agree on removal of ‘heritage’ trees.)
10. During design, A&E will work with Grounds in the round table review process to discuss options for saving and incorporating #2 trees. Site plan drawings will show which trees will be preserved and which will be removed. Per current tree removal permit protocol (see below), trees that will be removed will require a Tree Removal Permit.
11. If a tree that is not identified for removal is damaged or removed during construction, A&E will implement mitigation measures and/or penalties in accordance with the construction contract provisions.
**TREE RATING DEFINITIONS**

**Class 1 Trees:** Most important category.
Would be a significant loss to the campus if removed. One of the following sub-categories applies to the Class 1 tree(s) (describe why the sub-category applies):

- **Heritage Tree:** Any healthy valley oak tree with a trunk diameter of 33 inches at a height of 54 inches from the ground.

- **Landmark Trees:** A healthy tree or stand of trees that is of historical significance to the campus.

- **Specimen Trees:** A healthy tree or stand of trees that is of high value to the campus due to its size and/or species.

**Class 2 Trees:** Important tree.
Healthy tree that provides value to the campus due to its aesthetics, maturity, placement, and/or rarity in the region. An effort should be made to save.

**Class 3 Trees:** Average importance.
Young tree not yet of significant value to the campus, tree identified as problematic, or a tree starting to decline that might recover if given extra care. Could save or remove.

**Class 4 Trees:** Least important tree.
Very young tree, tree identified as problematic, or tree in serious decline. Remove.

**TREE REMOVAL PERMIT PROTOCOL**
The following actions must be completed before any campus unit may remove a campus tree.

1. The unit requesting the tree removal requests a tree removal permit from the Grounds Division. The Design Professional is to advise the Project Manager on recommendations for removal of trees. The Project Manager is to obtain the permit. The permit will include information on the tree type, size, location, need for removal, any alternatives to removal and an indication of when a decision is needed. The Grounds Division processes permits.

2. Before approving a tree removal permit, a Grounds Division Supervisor will review the permit with the Arboretum Superintendent. If the tree removal involves a project with a Building Committee appointed by the Executive Vice Chancellor, the University’s Representative will review the permit with the Building Committee chair.

3. When the Grounds Division Supervisor, the Arboretum Superintendent, and the project Building Committee chair all agree that the tree(s) should be removed, the Grounds Division Manager may approve the tree removal permit. The Grounds Division Manager will submit all approved tree removal permits to the Associate Vice Chancellor - Facilities at least one week prior to the scheduled work.

4. If the Grounds Division Supervisor, the Arboretum Superintendent, and the project Building Committee chair do not agree that the tree(s) should be removed, the unit requesting the tree removal will fund, and the Grounds Division will hire a certified arborist to provide a written recommendation concerning the tree(s). The Grounds Division Manager submits the “unapproved” permit with the arborist report to the Associate Vice Chancellor - Facilities for a final determination.

Pursuant to the Campus’ Long Range Development Plan EIR, the Campus shall conduct a pre-construction or pre-tree pruning or removal survey of trees greater than 30-feet tall during March 1 through August 31. The Office of Resource Management and Planning manages this effort.
ROAD CLOSURE PROCEDURES

1. Once it becomes clear during design that a road will need to be closed for construction, a presentation by A&E PM needs to be made at the Transportation & Parking Work Group (T.P.W.G) which meets every two months. Suzanne Strand handles the agenda (752-3253).

2. A&E PM then needs to contact Grounds and Taps for a job walk to determine if bike path detours are needed and what signage will be needed. There is a Grounds Road Closure Form on the Web (http://grounds.ucdavis.edu) that the PM fills out and takes with him to the job walk. Agreement will be made between Grounds & A&E for which signs they will be responsible for. Basically, Grounds will provide signage for the edges and bike detours. Signage at the construction site can be provided by the Contractor.

3. Signage, fencing and other pertinent items can be described in Division 1 of the bid documents.

4. 3 Weeks Prior to Actual Closure: A&E PM drafts language detailing the road closure and Emails it to various Campus Depts. (there is a Road Closure Distribution List set up in Outlook for this). After receiving feedback from the Campus, A&E PM sends final draft text for the Road Closure to Lynn Ostler, along with a PDF map showing the area in question.

5. Lynn will process a DIRECTIVE that will be distributed to the entire Campus (one week prior to closure of the road).
BACKGROUND AND PURPOSE
This Memorandum of Understanding (MOU) establishes responsibilities and procedures regarding
the planning, design, construction, and commissioning of the campus utility systems managed by
Facilities O&M. The goals of this MOU are to:

- Protect our workers and the health and safety of the campus community.
- Meet campus needs by providing reliable, on-spec, efficient utility services.
- Minimize service impacts to campus utility customers.
- Steward campus assets and resources.

SCOPE
This MOU covers the following nine utility systems:

- Electrical
- Steam
- Natural Gas and Propane
- Chilled Water
- Sanitary Sewer
- Domestic Water
- Utility Water
- Exterior Deionized Water (limited, follows domestic water protocols).
- Storm Drainage

This MOU does not cover Telecommunication systems, which are managed by Communication
Resources, nor any utility systems owned and operated by private companies (e.g., Pacific Bell
and PG&E).

A&E and O&M staff established the following eight areas of concern to be addressed by this MOU:

(1) Standards for Mapping Underground Utilities
(2) Project Planning and Design
(3) Standards for Location and Protection of Underground Utilities During Construction
(4) Pre-Dig Meetings
(5) USA Procedures
(6) Emergency Response
(7) Planning and Approval of Utility Shutdowns and Service Connections
(8) Design, Construction and Commissioning Procedures

Agreed standards and procedures for each of these areas are described below.

STANDARDS AND PROCEDURES

1) Underground Utilities Mapping
   a) Historically, the campus has not mapped or located utility systems to any consistent
      specific level of accuracy. Some portions of the mapped utilities were surveyed in prior
      to burial and are therefore extremely accurate. Other portions were mapped based
      solely on the information of unknown accuracy (e.g., bid documents when as-builts don’t
      exist). Thus, the GIS system, which forms the basis for all utility and constructing
      drawings are of uncertain reliability. In response, O&M Utilities has initiated an effort to
      record the level of accuracy for each utility and work to have all utilities brought up to
      meet the standards outlined in this MOU.
b) The campus standard for the all critical utility systems (minimally: high voltage electrical, natural gas, steam, chilled water, domestic and utility water lines greater than 2" diameter, sewer lines greater than 12", and storm drainage lines greater than 24" is a lateral accuracy of +/- 24". This standard was established, because hand-digging is required by the USA codes within 24" of marked utilities. Facilities O&M has set December 2005 as the deadline for meeting this standard for chilled water, steam, and domestic water lines greater than 2". Efforts on the remaining systems will follow.

c) The campus standard for all other, less-critical utilities (e.g., small diameter storm drainage lines, and small-diameter water lines) is +/- 4 feet. Whenever possible, a higher level of accuracy will be recorded for these utility systems.

d) All utility access and control points (e.g., valves and manholes) shall be located with a lateral accuracy of +/- 12 inches.

e) Facilities’ GIS maps will indicate which utilities meet campus standards and which utilities are of unknown accuracy and thus may not meet campus standards. These data will assist in planning project-specific utility location work (e.g., potholing), and in pre-planning excavation activities.

2) Utility Location During Project Planning and Design

a) A&E and O&M Project Managers shall use potholes or other techniques (hereafter referred to as “potholing”) to confirm and/or locate utilities in accordance with these procedures:

(1) The Project Manager team shall initiate and conduct a Potholing Meeting prior to potholing activities to determine if there are any obvious yet unrecorded utilities (attendees to include PM, PI, Contract Locator, O&M Utilities, and CR and O&M Excavation Coordinator)

(2) All utility points of connection (POCs) shall be located to a lateral accuracy of +/- 12".

(3) All utility access and control points within the bounds of construction (e.g., manholes and valves) shall be located to a lateral accuracy of +/- 12".

(4) All utilities within the bounds of construction that are planned for demolition or relocation to a lateral accuracy of +/-12".

(5) All known critical utilities (minimally: high voltage electrical, natural gas, steam, chilled water, domestic and utility water lines greater than 2" diameter, sewer lines greater than 12", and storm drainage lines greater than 24") within the bounds of construction to an accuracy of at least +/- 24".

(6) Pipelines shall be located at all points of inflection shown on the GIS drawings. Straight runs of pipe shall be verified at least every 100'.

(7) Project managers shall use discretion in deciding whether to locate less critical utilities (e.g., small irrigation lines). Project managers shall weigh the risks of hitting and repairing these utilities against the cost to locate them in advance of construction.

(8) Location information shall include: the coordinates of the utility (x,y,z), the type of utility (e.g., STM, CHW, DW, etc.), materials of construction, and size.

b) All location information shall be transferred to the GIS unit as soon as possible following location to update campus base maps.

c) All location information shall be recorded in the construction documents for the project.

d) A&E Engineering Group shall back-check utility potholing information with construction documents during their DD and CD review of A&E projects.

3) Pre-Dig Meetings

a) At the beginning of construction activities, and prior to each excavation activities on site - A&E will conduct a Pre-Dig Meeting to include USA locators, A&E PM, A&E Inspectors, O&M Utility System Managers and Contractors. The Pre-Dig meeting does not take the place of the USA process or any other contractual requirements, but rather serves as a means to help coordinate excavation planning activities and emergency response plans. The following topics will be covered during the Pre-Dig Meeting:

(1) A brief overview of planned excavation activities.

(2) A review of USA and contractual requirements for excavation.

(3) A review of known utilities that may be affected by the excavation work. This discussion should include a review of the current GIS map for the area and a comparison to contract drawings.
(4) A review of utility control points within the bounds of construction to be located and protected (should be performed even for “non-dig” projects).
(5) A review of emergency response procedures to be followed by all parties should any of these utilities be damaged.
(6) A review to determine if any special equipment and parts should be obtained prior to the start of excavation to speed repairs (e.g., non-standard, large-diameter chilled water pipe).
(7) A site walk to consider utility systems not shown on existing drawings (e.g., “There aren’t any electrical lines shown on the drawings; how is that lift station being powered?”).
(8) An action plan for O&M to locate and test control features for all potentially affected utilities (e.g., isolation valves outside the bounds of the construction site).
All actions will be noted on the Pre-Dig Meeting notes and signed by each participant. The A&E PM team is responsible for completing this essential task.

4) **Protection of Underground Utilities on Construction Sites**
   a) During the life of the construction project (while any and all construction activities are underway), the Contractor shall mark, protect, and keep exposed all known valve covers, pull-boxes, and manholes (surface facilities) for all utilities. Contractor shall clearly mark all existing surface facilities with orange cones or traffic delineators. The goal is to protect these assets from damage and keep them full operational. If utilities are in a high construction traffic corridor and have a probability of being damaged, then the Contractor shall fence around the surface facility. Fences shall fully envelop surface facility with adequate setback.
   b) All other utilities system subject to damage by construction activities (e.g., transite water lines with minimal cover), shall also be marked and protected.
   c) The A&E Engineering Manager and Senior Construction Administrator will tour construction sites monthly through this calendar year to ensure these procedures are being maintained. A&E and O&M will also tour construction sites quarterly.

5) **USA Requirements**
   a) Contractor and University remain responsible for complying with all terms of the USA law regarding notice, standard practices, and liability (see Attachments 2 and 3). To clarify the requirement of the law within this MOU, “Operator” is a shared responsibility of A&E and Utilities and “Excavator” is the contractor or subcontractor whose employees are actually performing the excavation work. As part of the pre construction meeting information package, A&E will distribute and discuss digging methods as they relate to the USA law (i.e., hand dig within 24” of marked edge of pipe). A&E will enforce these requirements with their Contractors.
   b) Implementation of USA requirements by the University. If pre-planning is implemented as outlined in Section 3, then the location of utilities via the USA process should be relatively straightforward. The USA process requires the firm actually performing the excavation to make the USA notification. Notifications are good for a period of 2 weeks, at which time they must be renewed.
   c) Facilities USA Locator will apply the same standard of care for locating utilities as defined in Section 1. The campus standard for all critical utility systems (e.g., high voltage electrical, natural gas, steam, chilled water, domestic and utility water lines greater than 2” diameter) is location within a lateral tolerance of +/- 24 inches. The campus standard for less critical utilities (e.g., small diameter storm drainage lines, and small-diameter water lines) is +/-4’. When the best available information does not support this level of accuracy, Facilities USA Locator will convey this information to the Excavator and A&E.

6) **Emergency Preparedness and Response to System Interruptions**
   a) Following the Pre-Dig Meeting, each O&M system manager will develop a Site-Specific Emergency Response Plan for each utility within the construction site. This plan will be kept on file with O&M, but will be made available to A&E and Contractors for review on request. Plans will clearly show all existing and new utilities and valves/switches necessary to shut utilities down in the event of an emergency. Primary and secondary means of isolation will typically be identified, along with an indication of which existing facilities would be affected by these isolation actions.
b) O&M will locate and test any on-site valves and isolation points, and verify that they have been adequately protected by the Contractor.
c) O&M will locate, test, and protect any off-site valves and isolation points.
d) In the event of a utility line break
   (1) The Contractor's first call should always be to the O&M Customer Support Center (CSC) (530.752.1655), followed immediately by a call to the A&E Inspector of Record. These notification calls, in themselves, will not trigger any contractual or cost issues for the project (e.g., no charges for false alarms, and all cost issues will remain between A&E and O&M).
   (2) If the IOR is on-site, the IOR, rather than the Contractor, will contact the O&M CSC.
   (3) If the IOR is offsite, on receiving notification from the Contractor, the IOR will immediately proceed to the site or dispatch another responsible party to represent A&E.
   (4) O&M CSC to dispatch system manager and other O&M staff as required. All initial communiqué shall be through the O&M CSC. Once the O&M CSC assigns the work to someone within O&M, they will contact the person who reported the event to close the loop and inform them who will be responding from O&M.
   (5) “Incident Command” protocols will be followed by A&E and O&M in response to urgent utility breaks. Once the IOR is on site, she/he is the incident commander until the O&M System Manager arrives (or his/her delegate). ETA to the site is no more than 10 minutes.
   (6) Once the O&M System Manager is on site, he/she would typically assume the role as incident commander for O&M activities. All direction to contractor shall be through A&E representative. ETA to the site is no more than 10 minutes.
   (7) The team to shut down the system and make repairs is: O&M, A&E, Contractor
   (8) This team is to remain on site until the system is successfully shutdown, repairs made and the systems on line. The System Manager may allow staff to leave as necessary.
   (9) As appropriate (e.g., when O&M is required to perform work) A&E PM shall process an O&M workorder within 48hrs of the break to fund O&M activities.
e) All communication and agreements with the Contractor shall be through the IOR unless urgency demands more immediate action and the IOR is not on site.
f) If off hours or weekend work, then the CSC shall contact A&E through the published call list. ETA to the site by A&E shall be 30 minutes. O&M can authorize work in absence of A&E if there is a life/safety risk or large risk to University assets.
g) All actual costs for mitigations of service interruption emergencies or other damage to University assets shall be borne by the responsible party.
h) A&E to perform an After Action Report review process for each major utility break. This will be included as part of daily report. Copy will be available to O&M up-on request.

7) Planning and Approval of Utility Outages (Shutdowns) and Service Connections
a) The current procedures for planning and implementing utility shutdowns are attached as Appendix 4.

8) Design, Construction, and Commissioning Process
a) O&M and A&E have developed a series of checklists to outline the most important steps and procedures to be following during the design, construction, and commissioning of utility systems. These checklists are not intended to take the place of the Campus Standards and Design Guide (CS&DG), but rather, they serve to amplify key points and focus attention on the most critical actions. The checklists also document which items are fully entrusted to A&E, and which items require input and sign-off from both A&E and O&M. These checklists are intended to be living documents, updated as circumstances dictate, perhaps even more frequently than the CS&DG. Though presented as large single checklists in this MOU, each of the checklists can be printed out in a more consolidated system-by-system style as best meets the needs of the users.
b) The Utility Design Checklist is presented as Attachment 5. These checks cover projects from inception through to the point of construction.
c) The Construction Checklist is present as Attachment 6. Also attached, by way of example, is a simplified checklist for Domestic Water (Attachment 7). Similar system-by-system checklists can be printed from the master checklist worksheet. These checks cover activities from the point when a Contract is awarded through the point when the various utility systems are energized. For most projects, the utilities are energized long before Substantial Completion. Thus, these checks are intended to ensure that utility systems are properly constructed, and partially commissioned before they are energized. Once a utility system is energized, O&M Utilities becomes responsible for maintenance and operation of those energized systems to the point of service to the constructed facilities.

d) The Final Acceptance Checklist is presented as Attachment 8. These checks are to be made immediately before the Notice of Substantial Completion is issued to the Contractor. These checks allow for a back-check on any issues noted before the utility systems were energized, and support the creation of a final punchlist for utility systems.

IMPLEMENTATION
A previous version of this MOU has been in use for over a year now. This new MOU will take its place, and will be implemented immediately. A&E will use their discretion to determine the best way to “catch-up” projects already through design or construction. If the standards and procedures outlined in this MOU can not be easily met for current projects, A&E will consult with O&M to reach a resolution for each project.

This MOU will be reviewed annually each May and updated as necessary. The checklists will be updates are required by mutual consent of both parties.

A&E INTERNAL UTILITY SHUT DOWN PROTOCOL: MAY 2004

Major Utility Shut Down Pre-planning (shut downs effecting two or more existing buildings):
1) A&E to identify major shut down dates from contractor (at least 30 days prior to actual shut down date to allow pre-planning).
2) A&E to inform O&M with the dates.
3) O&M to develop shut down pre-planning (identify isolation points, exercise isolation devices, identify impact, inform A&E with back-up requirements…
4) A&E to follow the Typical Utility Shut Down process noted below.

Typical Utility Shut Down Process:
Contractor to submit a utility shutdown on the Utility Service Interruption/Shut Down Request form (7 working day minimum notice is required) to the PI
1) PM and PI to review and if this meets the terms of the contract, draft a workorder and transmit the Shutdown Request to the Service Request Center (2.1655)
   a) It is understood that the MEP Inspectors will generate language for the shutdown work order for the Project Manager to endorse. Information is obtained from Exhibit 33. In special cases, the Project Managers will do this (i.e., East Quad HSIP). A pre-shutdown meeting with the Contractor, O&M and A&E will be held the day before the scheduled shutdown. These have to be highly productive. The Underground Utility Checklist should be initialed accordingly.
2) SRC is responsible for coordinating the shutdown with all the departments in O&M and the effected campus community. O&M Utility System Managers can communicate with the project inspector as necessary. For site utility shut down coordination, do not communicate with shop personnel; communicate with the utility System Manager (per Joe Stagner)
3) SRC to provide written verification via email or fax to the PA if/when the shutdown will occur. PA to inform PM and send the verification to the Contractor and to the PI simultaneously.
4) PI to confirm the shutdown with the Contractor on the Utility Service Interruption/Shut Down Request form.
5) Shut down is performed by O&M as per the approved date, contractor performs their work, PI will monitor the shut down and the related work.
6) O&M will return the interrupted service back to normal operation.
The CONTRACTOR SHALL NOT AT ANY TIME SHUT-OFF ANY PLANT RELATED EQUIPMENT, PIPING, POWER, DEVICES, ETC. O&M investigate and identify effected area and shut the effected system down. Facility/Operator shall energize system back to operational mode after the related work is completed.

Emergency Utility shut Down Process:
1) Contractor calls 2-1655 and PI and inform with the Utility break. PI /PM to follow up with the SRC to assure shut down work is in progress.
2) PM and PI to draft a workorder and transmit to the Service Request Center (2.1655)
3) SRC is responsible for coordinating the shutdown with all the departments in O&M and the effected campus community. O&M Utility System Managers can communicate with the project inspector as necessary. For site utility shut down coordination, do not communicate with shop personnel; communicate with the utility System Manager (per Joe Stagner).
4) A&E to follow the Typical Utility Shut Down process noted above.

Essential Central Utilities Shut Down Process:
Following steps must be taken prior to scheduling to shut any equipment, devices, valves, power, piping, etc. at any infrastructure building/projects such as CWWTP (Campus Waste Water Treatment Plant), Any lift stations (Sewer & Storm), Water pumps and Water storage facilities, any equipment/devices at CHCP (Central Heating & Cooling Plant), any equipment/devices at Sub-Station or any other plant related equipments including controls:

A). At WWTP, always contact Mike Fan at 2-7553 and David Philips, follow-up with e-mail to both along with a copy of the shut down request form (for any contractor related work) requesting for the shut down. Identify the scope of work. Allow contract required days to schedule shut down (allow minimum 7 working days unless the project requires special attention. In that case allow No less than 2 days if must).

B). At CHCP always contact Janice Stires or Louis Ruiz Chili at 2-2762 and Chris Cioni, follow-up with e-mail to both along with a copy of the shut down request form (for any contractor related work) requesting for the shut down. Ask Chris if a formal shut down request should also be submitted by A&E to service request center (If yes, see item #3 below). Identify the scope of wok. Allow contract required days to schedule shut down (allow minimum 7 working days unless the project requires special attention. In that case allow No less than 2 days if must).

C). At Sub-station always contact Damon Williams or Randal Johnson at 4-6226 and Chris Cioni, follow-up with e-mail to both along with a copy of the shut down request form (for any contractor related work) requesting for the shut down. Identify the scope of wok. Allow contract required days to schedule shut down (allow minimum 7 working days unless the project requires special attention. In that case allow No less than 2 days if must).

D). Follow the same process as above for other main central plant application such as Main Lift stations, well pumps, etc.

O&M Utility System Managers
Chris Cioni – Power (electricity, chilled water, steam, natural gas)
David Philips – storm water, sanitary sewer, domestic water, utility water
**CODES AND STANDARDS**

**RADIATION SOURCE ACQUISITION PROTOCOL**
In accordance with the permitting process as required by the California Code of Regulations, Title 17, any person intending to acquire a large radiation source (such as a linear accelerator, cyclotron, irradiator, etc.) shall notify Environmental Health & Safety at least 120 days prior to his/her possession or at least 120 days prior to the commencement of construction or reconstruction of the room which will house the unit, whichever occurs first. The equipment shall not be used until written approval of provisions for radiation safety has been obtained by the user from Environmental Health & Safety.

**LABORATORY**

**BIO-SAFETY LABORATORIES**
The Biological Safety Administrative Advisory Committee sets biosafety levels for research projects at UC Davis. For the purposes of this guideline, BSL 2 and 3 are considered biocontainment labs. The laboratory design professional will use the CDC/NIH publication “Biosafety in Microbiological and Biomedical Laboratories” as the basis of design.

For the following facilities, EH&S must be involved in the programming phase as requirements will be specified on a case-by-case basis.

- Biocontainment facilities for animals
- Biocontainment facilities for plants
- Insectories for disease vectors
- Biocontainment facilities for U.S. Department of Agriculture-regulated animal and plant pathogens
- Large-scale (> 10 liters) biological work
- Biological work in clean rooms, or covered by the Food and Drug Administration
- Biosafety Level 4 work

The Biosafety Officer (BSO), in collaboration with the BSAAC, must approve siting and design of any BSL3 facility and has final authority to authorize commencement of BSL-3 work.

**LABORATORY CLEARANCE**
Prior to any work (remodeling, demolition, etc.) being performed within laboratory rooms or other areas where chemical, biological, or radiological materials were used, the University's Representative shall obtain room clearance from EH&S.

**UNIVERSITY REVIEW**

**REGENTS’ DESIGN REVIEW**
Building design must be approved by the Regents in the following cases:

1. Building projects with a total project cost in excess of $5 million, except when such projects consist of the following:
   a. Alterations or remodeling where the exterior of the building is not materially changed, or
   b. Buildings or facilities located on agricultural, engineering, or other field stations, and buildings or facilities located in agricultural areas of a campus.
2. Capital improvement projects of any construction cost when, in the judgment of the UC President, a project merits review and approval by the Regents because of budget matters, fund-raising activities, environmental impacts, community concerns, or other reasons.
Requirements for approval are summarized in the Facilities Manual. Because specific procedures and schedules for design review and approval may change, the University’s Representative should confirm current practices with Operations & Maintenance and Environmental Management in the Office of the President.

After the independent reviews are completed, the final steps in the Regents approval process are the Regents design review and the preparation of The Regents’ Action Item (The Regents’ item) for submission. Procedures and guidelines for preparing and submitting Regents’ items, the design review and Regents’ presentation process are outlined in the Facilities Manual, Volume I.

The Office of the President is included in the Facility design review to provide an opportunity for University input on design content and review of Regents policy.

The following materials for the meeting are prepared by the A&E Design Group:
  1. A site map or aerial photograph of the project area
  2. Photographs of surrounding areas
  3. Land-use plan of the long-range development plan (provided by UCD Resource Management & Planning)

**INDEPENDENT DESIGN AND COST REVIEW**
Independent reviewers must be appropriately licensed, must have no previous connection with the project being reviewed, and must not be University employees, with the exception of qualified faculty members.

**INDEPENDENT SEISMIC REVIEW**
It is University policy to the maximum extent feasible by present earthquake engineering practice—to acquire, build, maintain, and rehabilitate buildings and other facilities which provide an acceptable level of earthquake safety for students, employees, and the public who occupy those buildings and other facilities at all locations where University operations and activities occur. Feasibility is to be determined by weighing the practicability and cost of protective measures against the gravity and probability of injury resulting from a seismic occurrence. University policy on independent seismic review states in part:

Independent review shall be conducted of the structural seismic design of facilities being considered for lease or purchase for University purposes. The depth and detail of review shall be appropriate to the type of structure, its intended use, its age, length of time to be leased, percentage of structure to be leased, and the geological conditions of its location.

**ANIMAL FACILITY DESIGN REVIEW**
Animal room design documents (including projects at the CNPRC Facility) shall be reviewed by the “Attending Veterinarian” during design. The Project Manager will forward a copy of the project program and project floor plan to the Attending Veterinarian at each phase of the design (i.e., DPP, SD, DD and CD). The Veterinarian will identify any additional requirements and will coordinate with the Project Manager to incorporate those into the design documents.

**OTHER REVIEWS**
  1. Outdoor dumpsters for trash and cardboard storage and collection locations are subject to Solid Waste Section Review.
  2. Outdoor and indoor recycling storage and collection locations are subject to R4 Recycling Program Review.
ROUND TABLE REVIEWS

SCHEDULING ROUND TABLE MEETINGS

Round Table meetings are *mandatory* at the following project milestones:

- 95% DPP
- 95% Schematic Design
- 95% Design Development
- 50% Construction Drawings
- 95% Construction Drawings

Round Table meetings may occur as required at the following additional project milestones:

- 50% DPP
- 50% Schematic Design
- 50% Design Development

The Project Manager and Project Assistant should structure the Round Table meeting into sessions of "like discipline":

**Site:** A&E, Consultants (Arch, Civil, Landscape), Grounds, TAPS, Planning & Budget, Fire, Solid Waste, Ag. Services

**Architectural:** A&E, Consultants (Arch, Special Consultants, i.e. lab, acoustic, etc.), Planning & Budget, Plant Operations--Structural, EH&S, Disability Resources, Police, Recycling, Custodial

**Structural:** A&E, Consultants (Arch, Structural), Plant Operations--Structural

**Mechanical:** A&E, Consultants (Arch, Mechanical), Plant Operations--Mechanical, EH&S

**Electrical:** A&E, Consultants (Arch, Elec), Plant Operations--Electrical

**Telecommunications:** A&E, Consultants (Arch, Elec), Plant Operations--Electrical, Communications Resources

**Site Utilities:** A&E, Consultants (Mech, Elec), Plant Operations--Electrical & Mechanical, Communications Resources

**Typical A&E Action Items:**

1. Project Manager to select appropriate reviews from the Checklist.
2. Project Assistant to schedule Round Table session a minimum of two weeks in advance. Separate review sessions for some campus departments may be required if they are unable to attend the scheduled session.
3. The Engineering Manager (or his designee) is to be present at MEP review sessions.
4. Review draft document with the Assistant Director Project Management prior to sending to departments.
5. Provide in-progress documents to the following departments a *minimum* of 1 week in advance:
   - Facilities - Plant Operations
   - Planning & Budget
   - EH&S
   - TAPS
   - Communications Resources
   - Grounds
6. The Fire Department requires 3 weeks to review documents. A separate review meeting may be arranged with the Fire Marshal.
7. Typically, the following departments do not require documents in advance of the Round Table meetings. A separate email may be sent to these departments noting that review documents will be available to A&E for their review:

Solid Waste
Disability Resources
Police
Custodial
Ag. Services

CONDUCTING ROUND TABLE MEETINGS

The following process should occur during the meetings:

1. Consultants to record comments in the form of meeting notes.
2. Project Management to record comments on record set of documents (plans & spec).
3. Record set of documents to be kept by A&E with all "red line" comments.
4. A&E Project Manager to conduct the meeting.
5. Keep meeting on schedule.
6. Be responsible for decisions regarding scope, budget, schedule.
7. "Referee" any conflicting requests from departments.

The following process should occur after the meetings:

1. Consultant to send meeting notes to Project Manager.
2. Project Manager to review and approve consultant’s notes.
3. Project Manager to send approved notes to Round Table participants.
4. Participants shall be given one to two weeks to respond to notes.

PRECONSTRUCTION MEETING

- PA schedules meeting based on standard minutes
- PM to read aloud kick-off minutes and cover any/all special issues
- PA reviews standard forms and procedures
- Inspectors review utility shut-down procedures
- Typical attendees include:
  - TAPS (mandatory)
  - Fire Department (mandatory)
  - Facilities Services (utilities)
  - Police Department (as applicable)
  - EH&S (Brent Feldman, Waste Manifest Coordinator—as applicable for renovations, has-mat, and abatement)
  - Consultants (optional)
  - Inspectors (mandatory)
OTHERS

LACTATION ROOMS
Lactation rooms are required in every new major campus building. During the programming process, contact UCD Child Care & Family Services to verify if this requirement would be waived for small buildings, special uses or occupancies, etc.

STUDENT HOUSING
Campus standards are not applied to Student Housing projects where they conflict with Student Housing preferences listed in the CSDG Appendix B – Student Housing because of the following:

1. Student Housing, an auxiliary unit of the Campus, receives no funds from the Campus, State, or federal government. No grant funds are used in any projects. Any financing used by Housing is arranged through UCHS (University of California Housing System), part of UCOP. UCHS coordinates and manages housing funds from all ten UC campuses; short- and long-term financing, if used in a project, is derived from UCHS pool funds or discrete bond issues for university student housing only. All remaining funds for Housing work are directly funded from Student Housing fees.

2. Student Housing facilities are owned by the UC Regents but managed by the Student Housing Auxiliary. Some campus housing (The Colleges, Primero Grove and Russell Park) is privately owned and operated; these projects are built to local industry standards except for utility connections to Campus systems, and other features as negotiated individually as a part of the respective Ground Lease.

3. UC Davis Student Housing desires to build new housing for students that exceeds the quality of the average new housing in the Davis multi-family market. The target is to build housing that is durable and easy to maintain, and that has a predictable service life of at least 40 years. Most such housing is for first-year students; this housing must have durable finishes, fittings and hardware.

4. UC Davis Student Housing projects are governed by all federal and state laws that apply to other University projects. What can vary is the “Campus preferences” that are described in detail in the Campus Standards guide. Certain requirements for laboratories and classrooms do not apply to wood frame multi-family housing.

5. Student Housing contracts through UC Davis Architects and Engineers or Operations and Maintenance for all major design and construction projects. These projects are subject to the same Capital Project approval rules as others: Campus, State, and Regents’ reviews are required. Drawing and phase submittal requirements are generally the same, although some projects may be built via an alternative process such as “design-build”.

6. Privatized housing projects are not initiated by Student Housing. These projects are usually developer designed, built and operated, and sit on land owned by the University. A typical ground lease for such a project is for a term lasting between 30 and 60 years. Construction standards for these projects are often identical to private-sector housing, with the usual exception of telecommunications and utility / underground construction. The University does not maintain these properties but does monitor maintenance and service obligations in the respective ground lease.