INTRODUCTION

• General definition and purpose of curtailment and this guide. This guide is provided as a resource for chilled water curtailments. Chilled water (CW) is produced and distributed from the Central Energy Facility (CEF) on campus. Chilled water is used by many buildings on campus to provide building space and equipment cooling. Not all buildings are supported by campus chilled water. Check with your supporting facilities department to see if your building is connected to the chilled water system. Chilled water is used across many areas of Stanford University, such as the adult and children hospitals, the academic campus, athletics, School of Medicine and Residential & Dining Enterprises. It is recommended that programs create action plans to be implemented when notified of a chilled water curtailment to reduce the impacts to programs and loss of equipment. Those plans should include internal communications within the program for sharing knowledge of the curtailment and actions to be taken.

• Curtailment reasons and potential for rapid escalation. The need to implement a chilled water curtailment can be caused by various situations or conditions. Some of the reasons are equipment problems or system failures, extreme temperatures and high humidity conditions or distribution problems. There are seven (7) stages of curtailment in the plan. During periods of curtailment, the situation is often very dynamic. The response may not always be systematic beginning at stage 0 and progressing sequentially through the specified seven stages. Changing situations may require rapid escalation in curtailment stage levels with limited notice. Curtailments consider actual weather as well as forecasted conditions, production capacity of the plant at the time of the curtailment against the system demands of the users of chilled water.

• General methodology and prioritization. All buildings that are connected to chilled water are evaluated to determine the usage need. The needs range from comfort cooling to patient care. The needs are broken down into seven (7) stages (defined below). Many of our buildings are diverse in function and may be affected at different stages of a curtailment.

• Communications. In the event of a chilled water curtailment, every effort will be made to communicate with chilled water customers as quickly as possible. Once we are aware of a problem we will communicate information to the Stanford community using the AlertSU system. At the implementation of a stage 1 curtailment the AlertSU system will be used to make the initial notification via email. The message will also be posted on the emergency.stanford.edu web site. At each change in curtailment stage a new AlertSU message will be sent out specifying the stage and an updated message will be posted to the emergency.stanford.edu web site. This guide will be posted to a web site and a link will be provided in the communications.

CURTAILMENT STAGES DEFINED

STAGE 0

Stage 0 (Soft Curtailment) - Adjustments to reduce chilled water use without directly impacting the functionality of campus facilities. Examples include temporary adjustments to space cooling temperatures while staying within campus guidelines, such as setting the thermostat to 78F in a space where the occupants may have it set at 72F.

• Examples of impact: There will be no notification sent to occupants at this stage. Occupied space will become warmer than usual.

Buildings Impacted
02-050 Law School
02-100 Humanities Center (Bowman)
02-210 Braun Music Loop 1
02-210 Braun Music Loop 2
02-250 Center for Turbulence Research
02-300 Tresidder Student Union North (Loop 1)
02-300 Tresidder Student Union South (Loop 2)
02-520 Mechanical Engineering, TSG
02-550 Peterson Lab
02-560 Center for Design Research
02-670 408 Panama
STAGE 1
Stage 1 (Comfort Cooling) – Allowing temperatures in occupied spaces to exceed campus guidelines (temperatures may exceed 90F).

- Comfort cooling is reduced in many offices and other parts of the campus, to preserves sufficient cooling capacity for medical, research, data processing and other facilities.

- Examples of impact: Occupied space will become warmer than usual.
- Potential actions to minimize impact: Make sure your curtailment contingency plans are enacted. Alert other program members of the chilled water curtailment. This may include selectively turning off heat producing office equipment to beginning shutdown of research equipment in preparation for further curtailment stage escalation.
- Potential actions to support curtailment: Monitor web site for updated information. Let your supporting facilities department know of special events for consideration. Turn off office equipment to include lighting. Consult with your building manager and management for next steps. Refer to Human Resource guidelines & policies.

Buildings Impacted
01-001 Administration (Partial)
01-010 President’s Office (Partial)
01-120 McClatchy Hall (Sociology)
01-160 Wallenberg Hall (Partial)
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01-170 Bldg 170 (Legal Offices/ Humanities)
01-200 Lane History Corner
01-380 Sloan Math. Ctr. (Math Corner)
01-420 Jordan Hall (Psych) (Partial)
01-460 Margaret Jacks Hall (Partial)
02-020 Center for Educ. Rsch. (CERAS)
02-040 Neukom Law Clinic
02-050 Law School (Partial)
02-100 Humanities Center (Bowman)
02-140 Kingscote Gardens
02-250 Center for Turbulence Research
02-300 Tresidder Student Union North (Loop 1) (Partial)
02-300 Tresidder Student Union South (Loop 2)
02-500 Terman Lab/Archaeology (Partial)
02-520 Mechanical Engineering, TSG (Partial)
02-530 Mechanical Engineering Admin
02-540 Blume Earthquake Lab (Civil Engr)
02-560 Center for Design Research (Partial)
02-660 Mechanical Engineering Lab (Partial)
02-670 408 Panama (Partial)
03-001 Art Gallery
03-100 Hoover Tower (Partial)
03-110 Hoover 2 (Lou Henry (Partial))
03-120 Hoover 3 (Memorial) (Partial)
03-200 Green Library West (Bing Wing) (Partial)
03-210 Green Library East
03-300 Cubberly Education
03-420 Sweet Hall
04-040 Nanoscale Science (Partial)
04-050 Paul Allen Center for Integrated Systems (CIS) (Partial)
04-050A CIS Annex (Partial)
04-070 Environment & Energy Building (Y2E2) (Partial)
04-080 Huang Engineering Center (HEC) (Partial)
04-270 HEPL South (Partial)
04-460 Green Earth Science (Partial)
04-470 Astro (Partial)
04-490 McCullough (Partial)
04-510 TCSEQ (aka Regional Teaching Facility, Hewlett) (Partial)
04-520 Varian (Partial)
04-530 Sequoia Hall (Statistics)
04-540 Durand (Partial)
04-560 Mitchell (Partial)
04-650 Roble Gym (Partial)
05-130 Denning House
06-010 Encina Center Basement
06-020 Encina Complex
06-030 Encina East
06-040 Encina Commons
07-200 Science Teaching & Learning Center (Partial)
07-230 Lokey Chem-Bio (Partial)
07-440 Bass Biology Building (Partial)
07-515 LI KA SHING CTR FOR LEARNING (LKSC) (Partial)
07-560 MEDICAL SCHOOL OFFICE BLDG (MSOB)
STAGE 2

Stage 2 (Temporary Disruption of Teaching, Research, and Commercial Operations) - Allowing temperatures in teaching, research, or commercial operations spaces to exceed campus guidelines (temperatures may exceed 90F), resulting in short term impact to teaching, research and commercial operations.

- Examples of impact: Temporary loss of teaching, research and commercial operations for the curtailment duration.
- Potential actions to minimize impact: Consider shutdown of research equipment that has a heat load and/or uses chilled water. Secure chemicals. Limit opening of refrigerator/freezer equipment.
- Potential actions to support curtailment: Turn off equipment that produces heat or uses chilled water. Continue to consult with your building manager and management for actions to be taken.

Buildings Impacted
02-010 Bookstore
02-050 Law School
02-210 Braun Music Loop (Partial)
02-300 Tresidder Student Union North (Loop 1) (Partial)
02-500A Terman Lab Annex (Partial)
02-570 Mechanical Engr Labs/Shops (HTGL) (Partial)
04-030 Packard Electrical Engineering (Partial)
04-080 Huang Engineering Center (HEC) (Partial)
04-460 Green Earth Science (Partial)
04-470 Astro (Partial)
04-480 Moore Materials Research (Partial)
04-490 McCullough (Partial)
04-510 TCSEQ (aka Regional Teaching Facility, Hewlett)
04-540 Durand (Partial)
04-550 Skilling
04-720 Thornton Center (Terman Annex)
06-750 Schwab Residential Center
07-090 McMurtry (Partial)
07-100 Cantor Center (Museum) (Partial)
07-200 Science Teaching & Learning Center (Partial)

07-920 HRP - REDWOOD BUILDING (Old Psych)
08-050 Knight Management Center (Buildings A through G) (Partial)
08-200 Burnham Pavilion
08-280 Gunn/SIEPR
08-290 Economics (Partial)
08-360 Littlefield Center
08-365 Knight Bldg (Littlefield Link)
08-450 Arrillaga Alumni Center (Partial)
08-650 Bing Concert Hall (Partial)
09-110 340 Bonair
09-190 333 Bonair
09-200 Fire and Police Facility
09-300 Maples Pavilion
09-307 Arrillaga Family Sports Center
14-070 Cordura/ Ventura (14-050) (Partial)
14-110 Cedar Hall (Partial)
14-160 Polya Hall (Partial)
14-650 EH &S Expansion
14-696 NWDCCH
Stage 3

Stage 3 (Long Term Disruption of Teaching, Research, and Commercial Operations) - Allowing temperatures in sensitive conditioned teaching, research, or commercial operations spaces to exceed campus guidelines (temperatures may exceed 90F), resulting in long term impact to teaching, research and commercial operations.

- Examples of impact: Loss of data and need for re-calibration of equipment.
- Potential actions to minimize impact: Secure research area for severe reduction of cooling. Restrict opening of refrigerator/freezer equipment. Shutdown of research equipment that has a heat load and/or uses chilled water. Consult with EH&S on safe storage of chemicals.
- Potential actions to support curtailment: Check with your School/Department for actions to be taken. Continue to consult with your building manager and management for local updates to action plans. Notify your facilities support unit that steps are being taken to shut down all program related equipment.

Buildings Impacted
01-420 Jordan Hall (Psych)
01-460 Margaret Jacks Hall
02-300 Tresidder Student Union South (Loop 2)
02-520 Mechanical Engineering, TSG (Partial)
02-530 Mechanical Engineering Admin (Partial)
02-565 Magnetic Resonance Resrch Lab (MRSRL)
02-570 Mechanical Engr Labs/Shops (HTGL)
02-660 Mechanical Engineering Lab (Partial)
04-040 Nanoscale Science
04-070 Environment & Energy Building (Y2E2)
04-470 Astro (Partial)
04-480 Moore Materials Research (Partial)
04-520 Varian (Partial)
04-540 Durand (Partial)
07-090 McMurtry (Partial)
07-200 Science Teaching & Learning Center
07-210 Mudd Chemistry
07-220 Keck Science (Partial)
07-230 Lokey Chem-Bio (Partial)
07-317 ADVANCED MEDICINE CENTER
07-340E Clark Center East
07-340W Clark Center West
07-420 Gilbert Biological Sciences (Partial)
07-450 Gates Computer Science (Partial)
07-530 BECKMAN CENTER FOR MOL & GEN MED
STAGE 4
Stage 4 (Permanent Loss of Research, Data Processing or Communications) - Allowing temperatures in research, data processing, or communications spaces, to exceed specifications (temperatures may exceed 90F), and impacting the process cooling water supplied directly to that equipment, resulting in equipment inoperability or damage.

- Examples of impact: University data/communications systems could be impacted. Potential failure of equipment. Potential loss of data and communication systems.
- Potential actions to minimize impact: Shutdown of computer/networking equipment. Activate other computing centers that don’t use chilled water if possible. Consider opening doors and deploying fans to circulate air. Security may be necessary at open doors. Be observant to condensation from chilled water piping on computing equipment.
- Potential actions to support curtailment: Confirm with your facilities support unit of actions to be taken to include full shutdown of program equipment.

Buildings Impacted
- 01-001 Administration
- 01-010 President’s Office
- 01-100 Bldg 100
- 01-110 Bldg 110
- 01-160 Wallenberg Hall
- 02-210 Braun Music Loop 1
- 02-300 Tresidder Student Union North (Loop 1)
- 02-500 Terman Lab/Archeology
- 02-500A Terman Lab Annex
- 02-520 Mechanical Engineering, TSG
- 02-530 Mechanical Engineering Admin
- 02-550 Peterson Lab
- 02-560 Center for Design Research
- 02-635 Press Telecommunications
- 02-660 MERL
- 02-670 408 Panama
- 03-100 Hoover Tower
- 03-110 Hoover 2 (Lou Henry)
- 03-120 Hoover 3 (Memorial)
- 03-200 Green Library West (Bing Wing)
- 04-030 Packard Electrical Engineering
- 04-050 Paul Allen Center for Integrated Systems (CIS)
- 04-050A CIS Annex
- 04-060 Shriram (Partial)
- 04-080 Huang Engineering Center (HEC)
- 04-270 HEPL South
- 04-460 Green Earth Science
- 04-470 Astro
- 04-480 Moore Materials Research
- 04-490 McCullough
- 04-520 Varian
- 04-540 Durand
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04-560 Mitchell
04-650 Roble Gym
07-090 McMurtry
07-100 Cantor Center (Museum)
07-110 Anderson Collection
07-220 Keck Science
07-230 Lokey Chem-Bio (Partial)
07-260 Stauffer I - Chemistry
07-270 Stauffer II - Physical Chemistry
07-305 E.D. STONE - BOSWELL BUILDING
07-306 E.D. STONE - GRANT BUILDING
07-306 E.D. STONE - GRANT BUILDING (Partial)
07-307 E.D. STONE - ALWAY BUILDING
07-308 E.D. STONE - LANE BUILDING (Partial)
07-309 E.D. STONE - EDWARDS BUILDING
07-400 Herrin Labs – Biology (Partial)
07-420 Gilbert Biological Sciences (Partial)
07-440 Bass Biology Building (Partial)
07-450 Gates Computer Science
07-515 LI KA SHING CTR FOR LEARNING (LKSC)
07-590 CENTER FOR CLINICAL SCIENCES RESRCH (CCSR) (Partial)
08-050 Knight Management Center (Buildings A through G)
08-050C Knight Management Commons (Zambrano Hall / North Bldg.)
08-450 Arrillaga Alumni Center
08-650 Bing Concert Hall
14-170 Pine Hall
14-200 Forsythe Main
14-200 Forsythe Data Center
14-200A Forsythe Annex

STAGE 5
Stage 5 (Animal Life Safety) - Allowing temperatures in facilities housing animals to exceed specifications, potentially impacting animal safety.

• Potential actions to minimize impact: Contact subject matter experts and advise of chilled water situation. Advise that they should respond per their contingency plans.

For list of impacted buildings, please contact your facilities team.

STAGE 6
Stage 6 (Human Life Safety) - Allowing temperatures in in-patient hospital spaces to exceed specifications, potentially impacting human safety.

• Potential actions to minimize impact: LBRE to contact subject matter experts and advise of chilled water situation. Advise that they should respond per their contingency plans.

For list of impacted buildings, please contact your facilities team.