4.11 HAZARDS AND HAZARDOUS MATERIALS

4.11.A Hazardous Materials Transportation and Storage

This response addresses comments FA1-24, LA6-1, LA6-2, O28-98, O31-28, O31-61, and SA1-6, as well as other similar comments, which concern hazardous materials transportation, storage, use, discharge, and emergency response in case of a hazardous materials accident or wildfire. Comment O28-98 includes concerns relative to a wastewater treatment facility and a Superfund site, both of which are located at the UC Davis campus.

It is the University's policy to comply with all applicable laws, regulations and University policies, which include state and federal cleanup programs. Because compliance, as described in the Draft EIR, will reduce potential impacts to a less-than-significant level, additional mitigation measures are not necessary.

As discussed in the Draft EIR, hazardous materials would be transported and used on the Campus. The UC Merced Department of Environmental Health and Safety (EH&S) would prepare the UC Merced procedures and policies for hazardous materials. Transportation of hazardous materials would occur in accordance with UC Merced policies and procedures. To minimize the potential for accidental spills of hazardous materials during transport on and off the Campus, suppliers and transporters will be required to follow U.S. Department of Transportation, California Department of Transportation, and U.S. Postal Service regulations for packaging, transportation, and handling. Every University of California campus develops and implements policies to comply with statutory and regulatory requirements. As an example, UC Davis has management plans for different types of hazardous materials that contain policies and procedures for transporting hazardous materials. Please refer to the website for the UC Davis EH&S Hazardous Materials Management team list of management programs as an example of UC procedures and policies for hazard materials transport.

Comment FA1-24 addresses the hazards of transporting natural gas to the proposed natural gas cogeneration facility. Natural gas would be transported to the campus facility by pipeline. Transportation of natural gas in pipelines is considered to be a very low-risk endeavor. An analysis of natural gas pipeline safety evaluated the incremental individual fatality risk per mile of 800 new miles of natural gas pipeline to be constructed in California (La Paloma 1998). The results of this study indicate that the risk associated with the new pipeline was much lower than that for fires, earthquakes, electrocution, and lightning strikes in California. These conclusions can be applied to the relatively short pipelines proposed for UC Merced; the increment of natural gas pipeline that would be needed to connect existing pipelines is less than 10 miles.

In regards to the storage of hazardous materials, UC Merced EH&S would manage Campus departments to be in compliance with both state and federal statutes and regulations, as well as the stringent UC Merced policies and procedures. All nine existing UC campuses have EH&S departments responsible for ensuring compliance with hazardous materials storage requirements. Similarly, UC Merced EH&S would develop and follow procedures for full compliance. UC Merced will follow applicable state and federal regulations in regards to the storage of petroleum products in aboveground tanks.

UC Merced EH&S policies and procedures for handling and use of hazardous materials will be created for the purpose of minimizing exposure to campus occupants and nearby public to

potential health and safety risks by describing the proper use and handling of hazardous chemicals and their waste products and ensuring proper training of UC employees. Campus EH&S will be responsible for ensuring safe work practices that comply with the California Occupational Health and Safety Administration regulations. As described above, UC Merced will comply with all state and federal regulations in addition to stringent UC Merced policies to further protect the public and the environment from exposure to hazardous chemicals and wastes. Please refer to Table 4.7-1 of the Draft EIR for an example of possible hazardous wastes to be generated by UC Merced. Specific hazardous materials used and generated under specific campus development projects will be identified and any new or substantially more severe impacts from these hazardous materials will be addressed in site-specific environmental review for those specific campus development projects. Please refer to Volume 2 of the Draft EIR, Draft Phase 1 Campus Impact Analysis, as an example of a site-specific environmental review for UC Merced.

Comment O28-98 does not accurately describe the University's actions with respect to the Davis campus's wastewater discharges or the Laboratory for Energy-Related Health Research (LEHR) Superfund site. The University's actions in each case do not demonstrate a willingness to expose the public to "hazardous chemical wastes." The Davis campus constructed a new, state-of-the-art wastewater treatment plant in 2000; this facility is one of the only plants in the Central Valley that provides tertiary treatment, a level of treatment that exceeds CWA requirements. A state-funded, multiagency technical study completed last year concluded that toxicity was not a significant problem in Putah Creek and that minor indications of toxicity measured in the creek were likely the result of test variability and other sampling methodology problems. The UC Davis wastewater treatment plant is generally operating well and in compliance with the terms of its CWA permit.

The LEHR Superfund site is a former federal facility, located at the UC Davis campus that conducted research for the U.S. Department of Energy after World War II. The U.S. Department of Energy and the University have been performing response actions at the site since 1988 through a series of cooperative agreements. These agreements were not the result of citizen suits to compel cleanup, although in 1995, a group of private plaintiffs sued the University for damages allegedly related to the former LEHR operations. This suit settled before trial and did not affect the cleanup that was already being performed. The University continues to participate in the cleanup of this facility.

As stated in Section 4.7 of the Draft EIR, UC Merced EH&S will implement an Emergency Response Plan for the entire campus in accordance with California Health and Safety Code Section 25503. This Emergency Response Plan will be designed to protect public health and the environment from possible hazardous materials accidents, fires on campus, and wildland fires. The University will consult with the City of Merced and Merced County to develop cooperative emergency responses and discuss the need for funding and Memorandums of Understanding at the time of development of the Emergency Response Plan. EH&S will have an emergency response team trained and equipped to address the majority of chemical spills and hazardous materials releases that could possibly occur on Campus. They will serve as the liaison to the Merced County Fire Department HazMat Team and will obtain specialized assistance from outside responders as necessary. EH&S procedures for responding to hazardous materials incidences provide multiple tiers to emergency response. Campus Departments and Principal Investigators are held responsible for preparing and implementing Injury and Illness Prevention

Plans, Laboratory Chemical Hygiene Plans, and Emergency Action Plans. Staff and occupants of buildings that contain hazardous materials undergo emergency planning and safety training. Evacuation plans would be implemented as required by California Occupational Health and Safety Administration regulations. Project occupants would be adequately trained to implement these plans, as well as all other required safety procedures.

Comments O31-28 and 031-61 request that the impacts on groundwater from hazardous waste generated by UC Merced be addressed. Groundwater could be impacted by hazardous materials at UC Merced in two main ways: release to the environment from accidental spills, and inadequate treatment of a hazardous material that enters the Campus waste stream. As mentioned above, accidental spills during transport will be avoided by requiring suppliers and transporters to follow all applicable regulations outlined by the U.S. Department of Transportation, the U.S Postal Service, and the State of California for the transportation, packaging, and handling of hazardous materials. If an accidental spill occurs, the Emergency Response Plan mentioned above will provide guidelines for responding to the incident, preventing pollution to groundwater. It is not anticipated that hazardous materials that cannot be properly treated at existing wastewater treatment facilities would be discharged into the Campus waste stream. Please refer to Section 4.11.B.2 for a thorough description of waste and disposal methods for hazardous materials and hazardous waste.

4.11.B Pollution From Wastewater Treatment

Comments from government agencies and private organizations (FA1-24a, O31-46, O31-61, SA1-4, and SA1-5) were received concerning the future recycled water treatment facility and possible discharge of chemical and biohazardous agents into the city's wastewater treatment plant.

4.11.B.1 Recycled Water Facility

As stated in Section 4.8.2.4 of the Draft EIR, the CWA encourages water reclamation as an integral part of water pollution control projects. California Water Code 13576 declares the environmental benefits of recycled water. It is anticipated that UC Merced will construct a tertiary wastewater treatment facility that would produce recycled, reclaimed water. The size, siting, and process design of a reclaimed water treatment facility would be determined as part of a future phase of campus development. If and when that project is proposed for construction, site-specific environmental impacts related to the building and operation of the facility, including possible hazardous materials use, will be addressed during the project-specific environmental review of the reclaimed water treatment facility. Because construction of a reclaimed water treatment facility is not anticipated in the near term, it would be speculative to assess the impacts of such a facility in greater detail at this time. Impacts will greatly depend on the location of the facility, which has not been determined, and on the available water treatment technologies, which may change by the time the decision is made to design and construct such a facility. At minimum, the reclaimed water would meet federal CWA requirements and California Title 22 treatment requirements, meaning that full body contact with this water is considered safe. Reclaimed water would be used for irrigation and nonresidential toilet flushing. The facility would additionally be used for educational purposes. The Campus has been designed to include

recycled water mains in order for buildings to be easily connected to a reclaimed water distribution system when such a facility is constructed.

Regulations for reclaimed water are discussed in Section 4.8.2.4 of the Draft EIR. At the campus site, regulation of reclaimed water is governed by the RWQCB and the California Department of Health Services. The SWRCB and the Department of Health Services provide several plans and policy guidelines for designing, constructing, using, and maintaining reclaimed water treatment facilities. To obtain a permit for a proposed tertiary wastewater treatment system or distribution system, an engineer's report must be filed with RWQCB under California Water Code 13522.5. To safely and legally design, build, use, and maintain a reclaim wastewater treatment facility, UC Merced will follow the appropriate regulations and obtain the appropriate permits.

4.11.B.2 City of Merced Wastewater Treatment Plant

As discussed in Section 2.8.4 of the Draft EIR, until the development of other wastewater treatment facilities, the campus sewer system would be connected to the City of Merced's sewer system. The City treats wastewater at its wastewater treatment plant located to the south of Merced. The City uses an advanced secondary treatment system, meaning that the wastewater effluent goes through a standard secondary treatment process and an additional nitrifing process that converts an ammonium form of nitrogen, which is toxic to aquatic resources, to a nitrate form of nitrogen, which is not toxic to aquatic resources (Kernkamp 2001). As discussed in the Draft EIR, the City has indicated adequate capacity to handle wastewater stream flows from the Campus through 2011.

The City of Merced is required by the RWQCB to establish pretreatment programs with industrial and commercial businesses to control waste discharges and prevent toxicity in wastewater treatment plant effluent. The Campus would be required to develop a pretreatment program (Kernkamp 2001). A pretreatment program may include the following components:

- **Local limits program**. A local limits program generally involves the identification of specific constituents of concern and the identification of potential sources and dischargers. USEPA and RWQCB provide general guidance on priority pollutants of concern for a variety of nondomestic discharges. Once limitations on specific constituents are created, discharge limitations are accomplished through education, periodic monitoring, and enforcement.
- **General prohibition**. Effluent toxicity is also addressed by a general prohibition on discharging nondomestic wastes to the sewer system. As with a local limits program, general prohibition is accomplished by education, periodic monitoring, and enforcement of the overall program.
- **Chemical amnesty program**. Through the payment of an upfront surcharge, users of hazardous chemicals pay the cost of chemical disposal at the time the chemical is purchased, thereby providing an automatic incentive to ensure proper disposal. A chemical amnesty program can also include an ongoing inventory and removal of unused, unwanted, and old chemicals in all campus facilities and laboratories, performed without cost or penalty.
- **Acute and chronic toxicity testing**. Testing is performed to evaluate compliance with prohibition and the effectiveness of a pretreatment program.

In addition to a pretreatment program for wastewater effluent control, the Campus would develop specific methods of disinfecting biohazardous liquid waste before disposal. These methods will be fully developed and implemented by the Campus researchers with oversight from UC Merced EH&S. The other UC campuses have established programs for disposal of biohazardous waste that would be used as models. Most research-generated biohazardous waste would be placed in biohazard-labeled bags and autoclaved, which would disinfect the waste. Biohazardous liquids that have been autoclaved can generally be discharged to the campus sewage system so long as the effluent discharge does not violate the sewage pretreatment program. Liquids that contain hazardous chemicals or radioactive waste will be disposed of in the proper manner determined by the particular hazardous chemical involved. Biohazardous wastes located in containers that are not autoclavable and cannot be safely transferred to an autoclavable container will be chemically disinfected prior to disposal.

Similar to other UC campus, EH&S at UC Merced will create guidelines for cleaning biohazard spills that will involve the proper use of chemical disinfectants to biologically decontaminate spill areas as an early step for cleaning the spills. Chemical disinfectants will also be used to clean surfaces used for biological experiments and in cleaning animal cages.

It should be mentioned that many of the procedures employed at UC campuses, such as those designed to prevent introduction of biohazardous agents into its wastewater effluent, exceed required public health practices for biohazardous release into waste streams. For instance, in laboratories using infectious agents, the standard use of chemical disinfectants prior to liquids being flushed into sewer lines at UC Campuses exceeds required public health practices for releases of infectious agents that are present in the public at large into the waste stream.

Through the implementation of a pretreatment program and internally developed biohazardous waste control methods, it is anticipated that infectious agents that could possibly be used at the Campus will not enter the City of Merced's wastewater stream at levels that could not be treated by the wastewater treatment plant.

4.11.C Other Safety Concerns

This response addresses comments LA5-2, LA5-13, LA6-2, as well as other similar comments, which ask for further information about public access to irrigation facilities and potential complaints from project development near a private airstrip.

UC Merced will be built around sections of Fairfield Canal, Le Grand Canal, and Yosemite Lateral. These are all irrigation channels under MID's jurisdiction. In the winter, these channels serve as storm water channels for flood control. As described in of the LRDP, MID will maintain a 150-foot easement along both canals. To decrease potential safety hazards, public access to the canals will be limited. As discussed in Impact 4.7-9, the Campus plans to use fencing and landscaping to limit accessibility to the canals. The Campus has indicated that it will specifically fence off the concrete grade-change chute on Fairfield Canal. Most likely, in the construction of the later phases of the Campus, Yosemite Lateral will be placed underground.

Lake Yosemite is a reservoir, owned by MID, that is used for both irrigation and recreation. Lake Yosemite Regional Park is a recreational park that includes Lake Yosemite and its shoreline. The County of Merced operates this park under a lease from MID. Open and direct public access to MID-owned Lake Yosemite will not change with the implementation of the

LRDP. The park permits a certain amount of access to MID facilities, like the use of Lake Yosemite for recreation purposes, and prohibits public access to other MID facilities on Lake Yosemite, like the headgates to Fairfield and Le Grand canals. The public use of Lake Yosemite is related to recreation. The park provides a variety of passive and active recreational facilities, including the use of power boats and jet skis with no maximum engine size. Public safety and liability issues at Lake Yosemite are related to the recreation facilities of the park. As reported in Impact 4.13-1, the Campus's proximity to the park will possibly increase public use of the park, but it will not change the existing public access at the park. To the extent that public safety is related to concerns about potential degradation of the park's recreation facilities caused by increased park use, the Draft EIR explains that Impact 4.13-1 is mitigated by four mitigation measures, 4.13-1(a), (b), (c), and (d). These mitigation measures reduce this impact to less than significant. Mitigation Measure 4.13-1(d) states that "if park use increases due to development of the campus and the University Community such that substantial physical deterioration of parks facilities occurs, then the University will negotiate with the County to offset increased costs to the County for maintenance of park facilities." Therefore, by maintaining the park facilities, public safety will also be maintained.

As explained under Impact 4.7-6 in the Draft EIR, a private airstrip is located within 2 miles of the proposed project site. This airstrip is used infrequently for agricultural uses, and, as reported in the Draft EIR, would not result in a safety hazard for people on the campus site. No foreseeable impacts exist to the campus environment from the use of aircraft for agricultural purposes.

Aerial application of pesticides, herbicides, etc., currently occurs on row crops located on farmland belonging to Hunt Farms. This farmland is located south of Cardella Road, approximately 1.5 miles from the southern most edge of the Campus site. A large parcel of pasture land is located between this area of aerially sprayed row crops and the proposed project site. This pasture land, which is not aerially sprayed, is the proposed site for the northern section of the University Community. This parcel, whether it remains used as pasture land or is developed and built as the University Community, will serve as a buffer between the area of aerially sprayed row crops and the UC Merced campus. The UCP Draft EIR acknowledges the potential for incompatibilities between future residents and the existing adjacent agricultural airstrip operations. As stated on pages 4.9-20 and 4.9-21 of the UCP Draft EIR, UCP Policies AS 1.1 and N 2.7 would ensure that airstrip operations are not interrupted by urban development and that airstrip operations do not adversely affect future residents. These policies require that, prior to approval of a specific plan within the area that is adjacent to the airstrip, it will be demonstrated that operations of the airstrip would not result in airspace safety concerns or unacceptable noise levels at any proposed residential areas. It should also be noted that the application of aerial pesticides is regulated by 3 CCR Division 6 and is implemented by the Merced County Agricultural Commissioners Office. The guidelines governing application of individual pesticides restrict the conditions under which pesticides can be applied, which reduces potential conflicts with adjacent uses. Residents of the University Community would be notified in brochures of potential nuisance activities associated with agricultural operations. As stated on page 4.3-34 of the UCP Draft EIR, Policy A 2.2 would require that all future residents be made aware of local agricultural operations, their practices, and the potential impacts (noise, odors, dust, etc.), pursuant to the Merced County Right-to-Farm ordinance, which informs residents that they should be prepared to accept inconveniences associated with agricultural activities (EIP Associates 2001).

Due to the distance of 1.5 miles between the Campus site and the agricultural lands that are aerially sprayed and the type of small propeller-driven aircraft used for aerial spraying of agricultural, no noise impacts to the Campus environment from airplanes are predicted.

References

EIP Associates. 2001. County of Merced University Community Plan, Draft Environmental Impact Report. August.

Kernkamp, A. 2001. CH2M Hill. Personal communication with URS. November.

La Paloma. 1998. Application for Certification La Paloma Generating Project. Submitted to the California Energy Commission. Docket 98-AFC-2. Prepared by Woodward-Clyde. August 12.