



CAL FIRE
San Luis Obispo
County Fire Department

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Robert Lewin, Fire Chief

COMMERCIAL FIRE PLAN REVIEW

December 28, 2012

Plains Exploration & Production Company

1821 Price Canyon

San Luis Obispo, CA 93405

Scope of permit:

Plains Exploration & Production – Phase V Oil Field Expansion Conditional Use Permit; DRC2012-00035. 11 new well pads with access roads, modification of 38 well pads and drilling of 350 new wells.

The project is located within a VERY HIGH fire hazard severity zone with a minimum 10 minute response time from the nearest County Fire Station. The project and applicant shall comply with the approved Phase V EIR, 2010 California Fire Code (CFC), the 2010 California Building Code (CBC), the Public Resources Code (PRC) and any other applicable fire laws.

Emergency Planning and Preparation

Hazardous materials

Prior to final, an updated and approved Hazardous Materials Management Plan (HMMP) must be provided. Chemical storage of unspecified classification will require a Hazardous Materials Management Plan HMMP. In accordance with California Fire Code section 2701.5.1/Title 19 Division 2, Chapter 4/Health and Safety Code Chapter 6.95.

CAL FIRE requires a written plan addressing safeguards to minimize the risk of unwanted releases, fires or explosions involving hazardous materials. Additionally, the written plan shall include safeguards to minimize the consequences of an unsafe condition involving hazardous materials during normal operations and in the event of an abnormal condition.

Precautions for the safe storage, handling, or care of hazardous materials shall be in accordance with California Fire Code section 2703.9 and shall include a Fire Department liaison to aid the Fire Department in pre-planning for all aspects of emergency responses. This includes table top and scenario based annual training with the San Luis Obispo County Hazardous Materials Team.

Rooms, buildings or areas used for the storage of liquid or solid hazardous materials shall be provided with spill control and secondary containment. California Fire Code Chapter 27.

Confined Space and Trenching

During construction, and ongoing maintenance of existing and new plant facilities; CAL FIRE/San Luis Obispo County Fire requires notification 24 hours in advance of any excavation or confined space entry operations which meet the definitions as outlined in Federal, state and local codes, and/or laws for permit required operations.

Notification can be sent via email to our dispatch center and chief officers as currently agreed upon, and exercised during phase IV construction and current plant operations. Notification provides both PXP and CAL FIRE/County Fire the ability to work efficiently and effectively as a team to mitigate accidents. Additionally, mitigation of an accident involving confined space or trenching operations will require the response of San Luis Obispo County Fire Department Urban Search and Rescue team who are trained to provide this advanced level of specialized rescue. Cal OSHA – General Industry and Construction Safety Orders - CCR Title 8, Sections 1502, 5156, 5157, and 5158. California Fire Code 101.2 & 101.3. Federal workplace safety regulations are ceded to the State's Cal OSHA, which must meet or exceed Federal regulations, San Luis Obispo County Code of Ordinances Section 16.10.010.

Operational Concerns

PXP is a large volume, high risk facility; the volume of operational and facility risks, technical personnel and equipment requirements to mitigate, and the response time for specialized teams to arrive and mitigate risks, increases the potential negative impact of an incident. Other industrial facilities in the county such as Diablo Canyon and Phillips 66 maintain fire brigades and management staff to coordinate, train and interface with San Luis Obispo County Fire Department. These facilities also provide annual funding for training and specialized equipment. The proposed Exceleton project EIR approved funding for specialized training and equipment to support less than 12 oil wells.

The drilling of 350 new oil wells and expansion of the existing oil field area will create additional demands on existing fire protection services provided by San Luis Obispo County Fire Department, imposing an increased risk on the environment, property and most importantly the public. Unique hazards associated with the planned oil field expansion present rescue concerns in numerous confined spaces, trench and excavation activities, and numerous significant hazardous materials exposures.

These unique hazards require their own specialized training and equipment to properly mitigate. CAL FIRE/ SLO County Fire recognizes PXP provides standby teams to perform required rescue operations for confined space entries, trenching operations and monitoring of Hazardous Materials handling during routine maintenance and construction; however if an incident occurs which overwhelms these standby teams, San Luis Obispo County Fire Department is the responsible agency providing Specialized Rescue Mitigation Response.

These necessary specialized rescue skills and equipment are provided by two specialized teams funded solely by San Luis Obispo County Fire Department. Members of these teams respond to incidents above and beyond their normal day to day duties. One of these teams is the Urban Search and Rescue Team comprised of 20 members, the other team is a Hazardous Materials Team comprised of 16 members.

Costs associated with training, and equipment are significant. Total annual expenditures exceed \$ 1,846,864.00 Please review the tables following tables outlining expenditures to fund and maintain our County's required specialized teams. County Fire position is to request developers cover a fair and equitable portion of these expenses, which is not only prudent, but good fiscal management.

Numerous facilities in our county require specialized rescue services; including 6 significant industrial facilities, approximately 20 medium and light industrial businesses, over 250 wineries, 215 miles of 12-26 inch oil and natural gas transmission pipelines, 72 miles of main line railroad with pipelines. Historically, PXP had an agreement to fund up to \$8,500 annually for Fire Department training. This agreement was in support of Phase IV operation. The newly proposed significant increase in construction operations, oil extraction, processing, storage and transportation poses an increased risk to property, environment, employees and the general public.

Therefore the annual fund to offset a fair and equitable portion of specialized training and/or equipment has been subsequently increased. A fair and equitable portion of these expenses for PXP has been determined at \$40,000 annually. This annual amount will be adjusted, increased to CPI, and be paid annually to San Luis Obispo County Fire Department upon receipt of invoice reflecting exact expenditures. The requested funding to support training and equipment for existing specialized teams, and the local engine company personnel arriving on scene first, will allow San Luis Obispo County Fire Department and PXP to more effectively and efficiently mitigate risks at the facility.

Hazardous Materials Team
16 members 49 CFR
Annual costs \$723,944

INITIAL TRAINING Tuition and Books \$5,600
Cover behind \$ 3200 per week - \$19,225
Initial Training Cost \$25,000 X 16 = 400,000

CONTINUING EDUCATION \$8684 tuition
Cover behind \$5000
Annual continuing education Training \$13,684 X 16 = 218,944

EQUIPMENT Response Trailer and equipment
Initial equipment cost \$700,000
15% annual replacement \$105,000

Urban Search and Rescue Team
20 members FEMA Fire scope ICS 420-1/120-1
Annual costs \$1,122,920

INITIAL TRAINING Tuition books & Travel \$6,600
Cover behind \$3200 per week - \$41,600
Initial Training Cost \$47,600 X 20 \$952,000

CONTINUING EDUCATION Local training only – no tuition costs
Cover behind \$2496
Annual continuing education training \$2496 x 20 =\$49,920

EQUIPMENT Response Trailer(s) & equipment
Initial equipment cost \$806,000
15 % annual replacement \$121,000

CAL FIRE County Fire also requires bi-annual training with PXP Fire Department Liaison, local engine company, assigned battalion chief, the HAZ MAT team and USAR teams to ensure our cooperative and efficient response to specialized and routine emergencies at this project site.

Regulations for Confined Space is outlined California Code of Regulations Title 8, Article 108 sections 5156, 5157 & 5158, Section 29 CFR 1910.146, 1910.134, 1910.147, 1926 subpart M. Regulations for Trench and excavations are found in OSHA Title 8 Section 1503 and 1539-1547. Hazardous Materials regulations can be found 49 CFR 172.704.

Fire Safety and Evacuation Plans

PXP shall provide a written Fire Safety plan whose contents shall be in accordance with sections California Fire Code Chapter 4 Emergency Planning and Preparedness. Employee training, record keeping, hazard communication and drills will also comply with this chapter. The written plan will include at a minimum the detail outlined in sections 404.3.1 (Evacuations Plans) and 404.3.2 (Fire Safety Plans).

404.3.1 Fire evacuation plans. Fire evacuation plans shall include the following:

1. Emergency egress or escape routes and whether evacuation of the building is to be complete or, where *approved*, by selected floors or areas only.
2. Procedures for employees who must remain to operate critical equipment before evacuating.
3. Procedures for assisted rescue for *persons* unable to use the general *means of egress* unassisted.
4. Procedures for accounting for employees and occupants after evacuation has been completed.
5. Identification and assignment of personnel responsible for rescue or emergency medical aid.
6. The preferred and any alternative means of notifying occupants of a fire or emergency.
7. The preferred and any alternative means of reporting fires and other emergencies to the fire department or designated emergency response organization.
8. Identification and assignment of personnel who can be contacted for further information or explanation of duties under the plan.
9. A description of the emergency voice/alarm communication system alert tone and preprogrammed voice messages, where provided.

404.3.2 Fire safety plans. Fire safety plans shall include the following:

1. The procedure for reporting a fire or other emergency.
2. The life safety strategy and procedures for notifying, relocating or evacuating occupants, including occupants who need assistance.
3. Site plans indicating the following:
 - 3.1. The occupancy assembly point.
 - 3.2. The locations of fire hydrants.
 - 3.3. The normal routes of fire department vehicle access.
4. Floor plans identifying the locations of the following:
 - 4.1. Exits.
 - 4.2. Primary evacuation routes.
 - 4.3. Secondary evacuation routes.
 - 4.4. Accessible egress routes.
 - 4.5. Areas of refuge.
 - 4.6. Exterior areas for assisted rescue.
 - 4.7. Manual fire alarm boxes.
 - 4.8. Portable fire extinguishers.
 - 4.9. Occupant-use hose stations.
 - 4.10. Fire alarm annunciators and controls.
5. A list of major fire hazards associated with the normal use and occupancy of the premises, including maintenance and housekeeping procedures.
6. Identification and assignment of personnel responsible for maintenance of systems and equipment installed to prevent or control fires.
7. Identification and assignment of personnel responsible for maintenance, housekeeping and controlling fuel hazard sources.

Fire Protection System requirements

NFPA 72 Alarm systems

A Fire Alarm System is required throughout the site for the various fire suppression systems and required hazardous conditions monitoring. The alarm system shall terminate at a 24-hour monitoring point. Two sets of plans shall be submitted to the County Fire Department for review and approval. California Fire Code Chapter 15 section 907.

Alarm system must be centralized and interlinked for the entire facility and include monitoring for all site alarm systems including; all on site Fire Protection Systems, and any and all hazardous materials, monitoring of hazardous materials, compressed gases, flammable and combustible liquids, liquefied petroleum gases, petroleum storage, delivery and processing areas.

Approved monitoring method shall be provided to detect hazardous materials. An emergency alarm shall be provided if hazardous materials have a hazard ranking of 3 or 4 in accordance with NFPA 704 and exceed the maximum allowable quantity per control area. California Fire Code Chapter 27

Petroleum Tanks

Fire Protection systems and safety precautions requirements shall be required in accordance with California Fire Code Chapter 34 Flammable and Combustible Liquids. Foam protection system shall be provided for above ground tanks California Fire Code section 34.04.2.9.1 in accordance with NFPA Standard 11 Low expansion foam and combined agent systems, and NFPA Standard 15 Water Spray Fixed Systems NFPA Standard 30 Flammable and Combustible Liquids Code.

Structures

The automatic fire extinguishing system shall comply with the National Fire Protection Association (NFPA) 13, or other approved NFPA Standard depending on target hazard. (Clean agent or alternative option)

Drilling and plant operations (steam generators, pipe racks)

Fire protection systems are required to minimize the loss from fire or explosion in liquid-processing facilities. Application of one or a combination of recommended systems as well as the use of fire resistive materials shall be determined by NFPA 30.

Where provided, fire control systems shall be designed, installed, and maintained in accordance with the following NFPA Standards:

NFPA 11 Low medium and high expansion foam, 12 carbon dioxide extinguishing system, 12A Halon, 13 installation of sprinkler systems, 14 installation of standpipe and hose systems, 15 water spray fixed systems for fire protections, 16 installation of foam-water sprinkler and foam-water spray systems, 17 dry chemical extinguishing systems, and 2001 clean agent fire extinguishing systems.

Special operations and facility safety precautions shall be conducted as outlined in NFPA 30 and California Fire Code section 3406; including but not limited to drilling, bulk transfer, refinement, vapor recovery, ventilation, spill control and secondary containment, fire protection, and static protection.

Tank vehicle and tank car certification shall be maintained in accordance with DOTn 49 CFR, parts 100-185.

A Fire Protection Engineer shall review the proposed Fire Protection Systems for this project.

Multiple fire protection and hazardous conditions systems are required for this project. A list of Fire Protection Engineers is available on our website at <http://www.calfireslo.org>.

Three sets of plans and calculations shall be submitted for functional review and approval to the County Fire Department. A licensed Fire Protection Engineer must design and submit all required drawings for CAL FIRE review. The contractor shall be licensed by the State of California, California Fire Code. A licensed alarm company shall monitor all fire protection and hazardous conditions systems.

Private Water System Requirements

NFPA Standard 22 Water tanks for private Fire Protection, NFPA Standard 24 Installation of Private Fire Service mains and their Appurtenances, NFPA Standard 25 Inspection, Testing and Maintenance of Water-Based Fire Protection Systems shall be utilized for this project.

Commercial water storage tanks must be steel. A pressurized fire hydrant system shall be required. A Registered Fire Protection Engineer shall be required to design the system in accordance with all applicable standards. The amount of water required in storage to support the numerous fire suppression systems will be determined and approved by the Fire Protection Engineer in cooperation with CAL FIRE/County Fire. Water required to be held in storage for domestic and/or landscaping purposes will be in addition to or separate from that required for fire suppression.

Hydrant Specifications

Plans shall be submitted to the County Fire Department for approval of the distribution system and hydrant locations. Fire hydrants shall have two, 2 1/2 inch outlets with National Standard Fire threads and one 4 inch suction outlet with National Standard Fire threads and comply with County Standard W-1. Each hydrant shall be identified by a blue reflective dot located on a non-skid surface located just off of center on the fire hydrant side. Hydrants must be protected from vehicle impact with the use of curbing or bollards.

The fire department connections (FDC) supporting the required fire protection systems shall be located within 20 feet of a San Luis Obispo County Dept. of Public Works/County Fire standard fire hydrant and visible on fire engine approach to the building.

Vegetation Management requirements

The existing 2006 approved Wildland Fire/Vegetation Management Plan must be updated to include all proposed Phase V work areas.

Screening and environmental considerations

Landscaping and vegetation shall be in accordance with San Luis Obispo County Planning and building "screening requirements". CAL FIRE requires that landscaping selections do not readily transmit fire.

Fire resistant landscaping located within 100 feet of site improvements (structures or fire water tanks) shall be in accordance with CFC, Public resources code 4291 and Title 19 Div 1 described as "vegetation that are well-pruned and maintained so as to effectively manage fuels and not form a means of rapidly transmitting fire from other nearby vegetation to a structure or from a structure to other nearby vegetation. The intensity of fuels management may vary within the 100-foot perimeter of the structure, the most intense being within the first 30 feet around the structure. Consistent with fuels management objectives, steps should be taken to minimize erosion. For the purposes of this paragraph, "fuel" means any combustible material, including petroleum-based products and wildland fuels. www.calfireslo.org website has several links with recommended planning tools for landscape and fuels management plans.

There is an expectation of dialogue to clarify fuels management requirements for pipelines and improvements in wildland areas to ensure a balance of environmental concerns and preventing risk from fire.

SITE ACCESS

Commercial Access Road(s)

- A commercial access road must be 24 feet wide.
- Parking is only allowed where an additional 8 feet of width is added for each side of the road that has parking.
- "No Parking - Fire Lane" signs will be required.
- Fire lanes shall be provided as set forth in the California Fire Code Section 503.
- Fire access shall be provided within 150 feet of the outside building perimeter.
- Must be an all weather non-skid paved surface.
- All roads must be able to support a fire engine weighing 40,000 pounds..
- Vertical clearance of 13'6" is required.
- Fuel modification of 10 feet on either side of roadway must be maintained.
- An approved traffic plan shall be provided to the fire code official.
- Interior commercial roads shall be named.
- One way interior roads shall be labeled indicating direction of travel.
- ***An approved on site (interior) traffic plan shall be provided to the fire code official.***
- ***On site (Interior) commercial roads shall be named and signed according to San Luis Obispo County Department of Public works standard M-4.***
- ***One way on site (interior) roads shall be labeled indicating direction of travel.***

Emergency Access

All commercial buildings shall install a Knox key box for fire department emergency access – CFC Section 506.1. The box shall be installed prior to final inspection of the building. An order form is available from the Prevention Bureau, call for more information at (805) 543-4244.

Gates:

- Must be setback a minimum of 30 feet from the SLO County maintained road
- Must automatically open with no special knowledge.
- Must have a KNOX key box or switch for fire department access. Call the Prevention Bureau for an order form at (805) 543-4244.
- Gate shall have an approved means of emergency operation at all times. CFC 503.6
- Gate must be 2 feet wider than the road on each side.
- Gates must have a turnaround located at each gate.

Required Signage and General Fire Precautions

Addressing

Address numbers must be legible from the roadway and on all buildings, significant structures, significant mechanized equipment and oil wells. Addresses shall be on a contrasting background and a minimum of 10 inches high with a 1/2" stroke for commercial projects. All occupancies shall have a distinct address.

A monument sign displaying the location of all buildings in the complex must be displayed in a prominent location at the entrance to the facility. All addressing and placement of street or road signs shall be done in accordance with CFC Section(s) 505.1 and 505.2.

Designated mechanical, electrical, and fire detection, suppression or control elements shall be identified for the use of the fire department. Approved signs shall be constructed of durable materials, permanently installed and readily visible. CFC section 509.

California Fire Code Chapter 30 Compressed Gasses

CFC 3003.4.3 Piping systems shall be marked in accordance with ASME A13.1 and shall consist of the contents' name and include a direction of flow arrow, at each valve, wall, floor or ceiling penetration, each change of direction, and a minimum of every 20 feet. Containers, cylinders and tanks shall be secured and separated from hazardous conditions. Monitoring and detection shall be in accordance with 3003.16.10.

California Fire Code Chapter 34 Flammable and Combustible Liquids

Signage for identification and warning inherent hazard of flammable or combustible liquid shall be provided. Signs will be of durable material white lettering on a red background. Letters shall not be less than 3 inches in height and 1/2 inch in stroke. Piping shall be identified in accordance with ASME A13.1

Permanently installed or mounted tanks more than 100 gallons in capacity storing class I, II or III liquids shall bear a label and placard identifying the materials. Placards shall be in accordance with NFPA 704.

California Fire Code Chapter 38 Liquefied Petroleum Gases

Minimum separation between LP-containers and buildings and public ways must comply with CFC table 3804.3. No Smoking signs must be posted within 25 feet of containers or point of transfer. Weeds, grass and brush, trash and other combustible material shall be kept a minimum of 10 feet from containers. Protection from vehicular damage shall be provided in accordance with CFC section 312.

Portable Fire Extinguishers

Portable fire extinguishers shall be installed in all the occupancies in compliance with the CFC 906 and Title 19. The contractor shall be licensed by the State Fire Marshal.

Combustible waste material

Every building or portion of a building shall be maintained in a neat orderly manner, free from any condition that would create a fire or life hazard or a condition which would add to or contribute to the rapid spread of fire.

CCR Title 19 Division 1.

Refuse containers must not be stored within 5 feet of combustible walls, openings, or combustible roof eaves, unless the refuse container is protected by an automatic sprinkler system installed in accordance with California Fire Code section 903.

Storage, stockpiles and enclosures

Areas must meet all applicable California Fire Code requirements and be labeled with NFPA 704 required placarding.

Electrical

Electrical wiring and equipment shall be installed and maintained in accordance with California Fire Code section 605 and the California Electrical Code. Hazards and fire prevention concerns relational to Electrical equipment, wiring shall be abated as specified in the aforementioned Fire Code.

Ignition resistant construction California Fire Code Chapter 7A/Wildland Urban Interface

The construction type should be designed to withstand a wildfire. This would include a class A roof, unexposed venting, fire resistant exterior walls, unexposed rafters, windows appropriately placed, LPG tanks properly placed, fire resistive decks and balconies, and other fire resistive construction techniques. All landscaping should be of fire resistive plants, preferably natives.

Exiting:

All egress and exiting components shall comply with Chapter 10 of the 2010 California Fire Code.

Fire Safety during Construction:

Prior to construction, an operational water supply system and established access roads must be installed in accordance with CFC Section 501.4. During construction all applicable Public Resources Codes must be complied with to prevent a wildfire. These will include the use of spark arresters, adequate clearance around welding operations, smoking restrictions and having extinguishers on site. The Industrial Operations Fire Prevention Field Guide will assist the applicant.

If I can provide additional information or assistance on this mater, please don't hesitate to contact me at (805) 543-4244.

Sincerely,

Laurie Donnelly

Fire Captain

Cc: Plains exploration Production Company (David Rose)