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Gallant Builders LLC (Gallant) has implemented this program for the safety of Motor Vehicles and Mechanized Equipment.

I. PURPOSE

The purpose of this program is to define the procedures and standards for the use of motor vehicle and mechanized equipment on Gallant projects.

II. SCOPE

This procedure applies in its entirety to all Gallant projects unless a variance is granted by the Gallant Safety Director.

III. POLICY

Workers involved in the use of motor vehicles and mechanized equipment shall follow the procedures outlined in this program.

IV. MOTOR VEHICLES AND MECHANIZED EQUIPMENT

This section sets forth the requirements and standards for Gallant's safety and health programs.

It covers the following specific areas:

- Operational Requirements
- Inspections
- Maintenance
- Testing
- Crawler Equipment
- Off-Highway Wheel Construction Machines
- Agricultural and Industrial Equipment
- Industrial Trucks
- A-Frame Trucks
- Aerial Lifts
- Other Mechanized Construction Equipment Standards
- Roads

Mobile mechanized equipment requirements contained and referenced in this section are applicable to all equipment propelled or drawn by mechanical power except rail rolling stock, passenger cars, trucks under 10,000 pounds, trailers under 3,000 pounds gross weight that meet Department of Transportation (DOT) design standards, snowmobiles, motorcycles, and all-terrain recreation machines.

V. OPERATIONAL REQUIREMENTS

OPERATORS.
Allow only authorized personnel to operate mobile equipment. Assign operators only to equipment they are qualified and licensed to operate. Provide operators with the instructions and training that their jobs require and ensure that operators:

- Meet the physical requirements of their job
- Meet the DOT licensing requirements for on-highway operations
- Do not operate mobile equipment for over 12 hours in any 24-hour period
- Comply with applicable operating instructions, limitations, regulations, and written safety programs and plans
- Do not allow the operation to begin or continue if the operator is not physically, mentally, and emotionally capable of operating the vehicle or equipment safely.

EXAMPLES.
Examples of unusual equipment configurations:

- Special use or conditional operations of dozers or other earthmoving equipment
- Anchoring mobile earthmoving or drilling equipment on steep slopes
- Hoisting with hydraulic excavating machines or multiple crane lifts
- Using a crane in conjunction with other equipment to lift loads

REQUIREMENTS
Do not use equipment in unusual configurations until the following information and procedural documents have been obtained or developed:

- Equipment manufacturer or registered professional engineer's (PE) written approval
- Appropriate confirmation that hoisting systems used to raise, lower, suspend, or stabilize equipment on slopes meet applicable design, testing, and certification requirements
- A Job Hazard Analysis (JHA)

EXCEPTIONS
- Hydraulic excavating machine hoisting operations conforming to the applicable provisions in the section, "Hoisting Equipment, Pile Drivers, and Conveyors."
- Operation of equipment on 30 percent or less grades when the operational assist system, dozer blades, loader buckets, dippers, winches, etc., are not required to stabilize the working machine in any operational configuration

PARKING, STOPPING, STANDING
Do not stop, park, or leave standing any equipment on any road, ramp, accessway, or other location in such a manner as to endanger personnel or property.

Do not leave equipment unattended unless the motor has been shut off, brakes securely set, transmission gears engaged, and all hydraulic components lowered to a supporting surface or otherwise protected against accidental movement.

Chock or turn the wheels toward the curb on any equipment parked on a grade.

Concrete trucks, lubrication trucks, fuel trucks, and similar equipment using primary engine-powered auxiliary equipment, also known as power take off (PTO), and/or exterior controls are not considered unattended when:

- The operator is outside the cab but within arms-length of the unit or is in contact with auxiliary equipment or controls.
- The primary unit's brakes and gearing arrangements are designed for safe use of auxiliary attachments and/or exterior controls are in the proper position.
- The primary unit is equipped with an automatic lockout device that prohibits operating exterior controls until the brake and gear arrangements are in the proper position.

Diesel-powered earthmoving equipment being refueled or cooled down in a secured area or under visual observation of the operator or a mechanic, with brakes set and wheels chocked and hydraulic components lowered to a supporting surface, is not considered unattended.

BACKING-UP
All mechanized equipment shall have a working back-up alarm.

SPEEDS
Do not operate equipment at speeds greater than those that are reasonable and safe considering weather conditions, traffic, road conditions, type and condition of equipment, and manufacturer's recommendations. The operator must have the equipment under control at all
times and be able to stop within the clear-sight distance.

GENERAL VEHICLE USE
All motor vehicles and mechanized equipment shall be used only for their intended purposes.

EQUIPMENT LOAD LIMITS
Motor vehicles and mechanized equipment shall not be loaded beyond the manufacturer's established load limit.

FUELING
When fueling motor vehicles and mechanized equipment the operator must shut off the engine, keep the filler nozzle in contact with the fuel tank and not smoke of have an open flame in the fueling area.

GEARS ENGAGED
Do not operate any vehicle on a downgrade with gears in neutral or clutch disengaged.

TOWING
Do not permit employees between a towed vehicle and the towing vehicle, except when hooking or unhooking it.

UNATTENDED AT NIGHT
Make sure equipment left unattended after hours on or near roadways or in areas where work is in progress has lights, reflectors, or lighted or reflective barricades to identify the location of the equipment.

UNAUTHORIZED RIDING
Do not allow personnel to ride in or on mobile equipment unless they are sitting in a seat designed and installed for that purpose.

SECURING LOADS
Properly distribute, chock, tie down, or otherwise secure the load on every piece of mobile equipment according to DOT regulations (table 20-1). Secure tools and material transported in the same compartment as personnel to prevent movement of the tools and material.

SEATS AND SEATBELTS
Seatbelts shall be on prior to starting a piece of mechanized equipment and worn while the operating the piece of equipment.

Do not allow operators or passengers to ride on or in equipment unless they are seated with installed seatbelts fastened, except for stand-up operation.

EMERGENCY EQUIPMENT
Equip all trucks and combination vehicles operated on public roads including all buses, and vehicles carrying flammables, explosives, or hazardous materials with emergency equipment.
Equip all mobile machines with appropriate fire extinguishers.

PERSONAL PROTECTIVE EQUIPMENT
All workers are required to wear hardhats and safety glasses when operating open cab mechanized equipment.

FLAGS AND REFLECTORS
Use a red flag measuring at least 12 inches square with three reflective markers when parked along public roadways.

WHEEL CHOCKS
Use two-wheel chocks for each vehicle or trailer use where there is a possibility that the vehicle will move or shift because of roadway conditions or loading or unloading of the vehicle or trailer.

FIRE EXTINGUISHERS
Install one 2-A:40-B:C dry chemical extinguisher. When transporting flammable or explosive cargo, install at least two 2-A:40-B:C dry chemical fire extinguishers.

VI. INSPECTION REQUIREMENTS

INITIAL
Qualified personnel must inspect mobile equipment before conducting required onsite brake performance tests to ensure that the equipment is in safe condition and that it meets the original design specifications and the standards of this section. Conduct the inspection at the site. Ensure that the inspection is recorded on the applicable form and verified by a Reclamation representative. Repair unsafe equipment and re-inspect it before it is returned to service and/or before the brakes are tested.

The employer must inspect equipment exempted from brake tests before it is used onsite. Repair and re-inspect the equipment if it is unsafe. Make a record of the inspection available for review.

PERIODIC
Inspect equipment in service at the beginning of each shift.
Do not place the inspected unit into service unless applicable equipment and accessories are in safe operating condition, including:

- Service Brake
- Secondary Brake
- Parking Brake
- Windows
- Tires
- Warning Devices
- Steering Mechanism
- Operating Controls
- Wipers
- Defrosters
- Coupling Devices
- Fire Extinguisher
- Keep daily inspection logs with the vehicle

VII. MAINTENANCE REQUIREMENTS

REMOVAL FROM SERVICE
Remove equipment from service whenever an unsafe condition is detected. Do not place it back in service until it has been repaired.

REPAIR SHUTDOWN
Shut down and secure equipment while repairs or adjustments are being made unless operation is essential to making the adjustments or repairs.

REFUELING
Refueling is subject to the requirements in the section, "Standards for Material Handling, Storage, and Disposal."

TIRE REPAIR
Provide a safety tire cage and use it when inflating, mounting, or dismounting tires installed on "split rims" or rims equipped with locking rings or similar devices. Do not weld on rims unless the tire has been removed.

BLOCKING
Block or crib equipment or parts suspended or held aloft by cables, hydraulic cylinders, slings, ropes, hoists, or jacks, or lower it to a supporting surface before permitting employees to work in, under, or between pieces of equipment or parts.

BRAKE REPAIR
Use a vacuum with a high efficiency particulate air (HEPA) filter to clean asbestos-lined brake assemblies. Do not use compressed air for this purpose.

VIII. TESTING REQUIREMENTS

Conduct operational tests, required by the manufacturer's maintenance and operational manuals accompanying the machine or equipment, at recommended intervals. Appropriately log test results and make them available. Onsite brake tests for specific equipment are included in operation tests. Loading tests are required for operational testing of cranes.

REQUIREMENTS FOR ON-HIGHWAY EQUIPMENT
Trucks over 10,000 lb. (GVW), including but not limited to tractor/trailer combinations, concrete trucks, dump trucks and buses, and self-propelled and rubber-tired truck cranes and excavators shall meet the applicable requirements of this section and subsection, appendix G, and applicable DOT requirements contained in Federal Motor Carrier Safety Regulations 49 CFR 390-399.

DUMP TRUCKS AND END-DUMP TRAILERS
Equip dump trucks and end-dump trailers of all types with the following safety devices:

TRIP HANDLES
Equip trip handles or dump body operating levers that control hoisting or dumping with a latch or similar device that will prevent accidentally starting or tripping the mechanism. Locate the trip handle so the operator remains clear of the load or dumping device.

HOLDING DEVICE
Permanently attach a manually operated strut to the truck body for use in preventing accidentally lowering the dump body or bed during inspection or maintenance operations. Use the holding device when personnel are around or under the dump body and the bed is in the
raised position.

CAB PROTECTION
Protect the operators of trucks loaded or unloaded by means of a crane, power shovels, loaders, or similar equipment with a cab shield barrier and/or a protective canopy adequate to stop or deflect falling or shifting material. When such protection is not installed, the operator

must leave the cab during loading and unloading operations.

TIP-OVER SAFETY DEVICE

Under the following circumstances, equip long-bed end-dump trailers used in off-road hauling with a roll-over warning device:

- The material being dumped is subject to being stuck or caught in the trailer rather than exiting the bed freely.
- The dump site cannot be maintained in a nominally level condition (lateral slope less than 3 percent).
- Equip the device with a continuous monitoring display at the operator station to give the operator a visible and audible warning of an unsafe condition.

BRAKING SYSTEMS

Equip all on-highway equipment with braking systems as described herein.

A. Equip a bus, truck, tractor-trailer, combination of vehicles, or similar type equipment with the following braking systems that conform to these requirements:
    i. A Service Brake System
    ii. A Parking Brake System
    iii. A Secondary Braking System
B. Equip mobile cranes and excavators, mounted on rubber-tired chassis or frames, and manufactured after July 1967 with a service braking system, secondary stopping (brake) system, and a parking brake system.

BRAKE PERFORMANCE TEST

After satisfactorily completing initial inspection requirements of this section, but prior to initial onsite use, equipment must satisfactorily complete an onsite brake performance test. Subsequent tests must be conducted annually, or following repair or maintenance of braking systems.

Equipment owned/leased and operated by suppliers and engaged in limited operation on the project are exempted from brake performance test and inspection requirements. Onsite brake performance tests will be verified by a Gallant representative on each piece of equipment in accordance with the manufacturer's prescribed method for brake performance testing if:

A. The procedure is in writing.
B. The method verifies the operation of the service, secondary, and parking brake systems.
C. The manufacturer's opinion is adequate to verify that the braking systems would meet the applicable SAE standard requirements. In lieu of an acceptable manufacturer-approved brake performance test procedure, onsite brake performance tests will be verified by a Gallant representative on each piece of equipment in accordance with appropriate method and procedures. Test results will be recorded on the appropriate form and maintained in the equipment file.

Equipment failing the test shall not be placed into service until repaired and retested.

IX. CRAWLER EQUIPMENT REQUIREMENTS

Crawler equipment and operations must meet the requirements of this section.

ROLLOVER PROTECTIVE STRUCTURES (ROPS)
Install ROPS on all crawler tractors and loaders except side-boom crawler tractors when these are equipped with seatbelts and the boom and counterweights are installed.

FALLING OBJECTS PROTECTIVE STRUCTURES (FOPS)
Equip crawler tractors and loaders with protective structures when they are used in operations that expose the operator to falling objects.

OPERATOR ENCLOSURE
Equip crawler tractors, loaders, or forestry machines with enclosures when used in tree-clearing operations or other operations where objects may intrude into the operator's area.

CERTIFICATION OF PROTECTIVE STRUCTURES (ROPS) (FOPS)
Make certain that protective structures, ROPS and FOPS, meet required design criteria available for review before the equipment is used. Acceptable methods of certification are:

- Manufacturer’s or PE's written confirmation that the structures meet required design criteria
- Permanent labels attached to the structure

MODIFICATION OR REPAIR OF PROTECTIVE STRUCTURES - ROPS AND FOPS
Modification or repair of protective structures of ROPS and FOPS without manufacturer or PE's written approval voids certifications. Remove decertified protective structure(s) from service until the modified, repaired, or damaged protective structure is recertified or replaced.

BRAKING SYSTEMS
The service and parking brake systems on crawler equipment must be adequate to stop and hold the machine on all surfaces.

ACCESSORIES
Equip all crawler equipment with the following accessories:

LIGHTS
Equip machines operated at night or when vision is obscured with two symmetrically mounted lights or flood lamps that illuminate the forward working area and with one light or flood lamp of equal intensity for illuminating the rear working area.

Also provide one bucket lamp on all shovels and excavators. Also equip slow-moving vehicles such as dozers with a rotating amber light or equivalent that is visible in all directions.

WARNING DEVICES
Install an automatic functional backup alarm where there is obstructed vision to the rear.

ACCESS SYSTEMS
To personnel entering, leaving, or working in or on operator cabs or stations or inspection or on service platforms provide steps, stairways, ladders, walkways, platforms, handholds, guardrails, and entrance openings. Keep the vertical height of the first steps no higher than 28 inches from the ground. Such systems provide the person with three points of support at all times.

SEATBELTS
Install and use seatbelts on all equipment protected by rollover protective structures or as required elsewhere. Where seatbelts are installed, use is mandatory.

EQUIPMENT CABS
Equip cabs with shatter-resistant glazing in all windows, heaters, defrosters, windshield wipers, and door restraints. Provide bidirectional machines with rearview mirrors. Equip machines with windshields but not cabs with windshield wipers as appropriate.

BARRICADES
Barricade the swing radius area of rotating superstructures of track hoes or similar equipment in a manner that physically prevents persons or equipment from being struck by the superstructure.

X. REQUIREMENTS FOR OFF-HIGHWAY WHEEL CONSTRUCTION MACHINES

Off-highway wheeled construction machines, including but not limited to loaders and tractors, scrapers, dumpers, graders, rollers and compactors of mass greater than 3 tons, water wagons, and similar-type equipment, must conform with this subsection; applicable provisions of this section.

Mobile, self-propelled cranes are also subject to this subsection.

BRAKING SYSTEMS
Equip all equipment regardless of age with a safe and operable service braking system, an emergency stopping (brake) system, and a parking brake system.

Units manufactured before 1980 may conform to the SAE Standard under which they were manufactured, if: (1) the standard requires a service brake system, an emergency brake system, and a parking brake system, and (2) failure of any one system or component will not reduce the effectiveness of the machine's stopping capability below the emergency stopping performance.

BRAKE PERFORMANCE TEST
The employer shall, after satisfactorily completing the initial inspection requirements, conduct onsite brake performance tests on all equipment before it is returned to use, annually thereafter, and as whenever needed.

A. A Reclamation representative will verify onsite brake performance tests on each piece of equipment in accordance with the manufacturer's prescribed method for brake performance.

The certification will:

- Be in writing
- Provide a method to verify the operation of the service, emergency, and parking brake systems
- Be, in the manufacturer's opinion, adequate to verify that the braking systems would meet the applicable SAE standards

B. No testing is required for roller compactors on slopes less than 3 percent.

C. In lieu of an acceptable manufacturer's approved brake performance test procedure, conduct onsite brake performance tests according to the following procedures:
   - Individually test each required braking system (service, emergency, parking)
   - Record each test result on the form, then date and sign.
   - Do not return equipment failing the test to service until corrective
   - measures have been taken and a retest confirms the equipment is safe to operate.

XI. REQUIREMENTS FOR AGRICULTURAL AND INDUSTRIAL EQUIPMENT

Agricultural wheeled tractors and industrial equipment, including but not limited to tractors, loaders, backhoe loaders, trenchers, and similar type equipment will be designed, operated, and maintained in a safe condition. All equipment must have service and parking braking systems that can stop and hold the equipment on any surface.

REQUIREMENTS FOR PERSONNEL TRANSPORT VEHICLES AND BUSES
All vehicles transporting personnel shall be operated and maintained in a safe condition.

TYPE OF EQUIPMENT
Use only fully enclosed vehicles with seats and seatbelts for operators and passengers to transport personnel.

OPERATOR QUALIFICATIONS
Operators of buses must be 21 years old and have in their possession a valid State operator's permit or license for the type of vehicle being operated. Operators must have passed a physical examination within the past year showing they are physically qualified to safely operate the vehicle.

STARTING
Do not allow vehicles transporting personnel to move until the operator has checked that all persons are seated, seatbelts are fastened, and doors are closed.

TOOLS AND MATERIALS
Place tools and materials in containers or secure when they are transported in vehicles carrying personnel.

REQUIREMENTS FOR INDUSTRIAL TRUCKS
All industrial trucks must meet the requirements for design, construction, stability, inspection, testing, maintenance, and operation as required for safe use. High-lift rider trucks shall be equipped with overhead guards (ANSI B56.1).

INSPECTION
Perform and document industrial truck inspections according to the manufacturer’s operating manual before the trucks are operated.

LIFT TRUCKS AND STACKERS
Post capacity plates on lift trucks and stackers within the operator’s view. When removable counterweights are used, the operator must not exceed the corresponding rated capacities. Do not make modifications or additions

affecting the capacity or safe operation of the equipment without the manufacturer's written approval or without making corresponding revisions to the capacity plates.

STEERING KNOBS
Do not attach steering or spinner knobs to the steering wheel unless the steering mechanism is of a type that prevents road reactions from causing the steering wheel to spin. Mount the knob within the periphery of the wheel.

LIFTING PERSONNEL
Do not use powered industrial trucks for hoisting personnel.

RAIL CAR AND SEMI-TRAILER LIFTING
Take positive steps to prevent the movement of the car or trailer before using an industrial truck to load or unload a rail car or "over the road" trailer. Positively fasten ramps or dock plates in place to prevent accidental movement.

MULTIPLE LIFTING
Do not lift a load using more than one industrial truck, unless a task specific job hazard analysis has been prepared and approved by the office head. The load lifted by each truck must not exceed 80 percent of its rated capacity when used in conjunction with other trucks.

BATTERY CHARGING
Recharge battery operated industrial trucks in designated areas that have been evaluated to ensure that ventilation is adequate to prevent the accumulation of flammable and explosive gasses; and, ensure there are no flammables or combustibles in the area.

OPERATOR TRAINING
Train and evaluate employees before assigning them to operate powered industrial trucks. Train operators as specified in 29 CFR 1910.178(l)(3). Include the name of the operator, the date of the training, the date of the evaluation, and the identity of the person(s) performing the training or evaluation in the certification that the training and evaluation has been completed.
A training program must consist of the following three parts:

- Formal instruction that includes lectures, discussions, interactive computer learning, videos, or written material.
- Practical, hands-on training that includes demonstrations performed by the trainer and practical exercises performed by the trainee. Conduct the training on the particular equipment the trainee will be operating on the job.
- Evaluate the operator's ability to handle the truck safely in the workplace.

FREQUENCY OF EVALUATION
Evaluate each operator's performance periodically, but at least once every 3 years.

REFRESHER TRAINING
Training should include the following:

- Surface conditions
- Load stability

- Lifting different types of loads
- Putting down a load
- Traveling tips
- Hazardous locations
- Activities and environments employee will be working in

If one of the following occurs, provide refresher training:

- The operator was involved in an accident or near miss incident.
- The operator was observed operating the vehicle in an unsafe manner.
- The operator was evaluated as needing more training.
- Changes in the workplace could affect safe operation (such as a different type of paving, reconfigured storage racks, new layouts with narrower aisles or restricted visibility, or the operator is assigned to a different type of truck).

XII. REQUIREMENTS FOR A-FRAME TRUCKS

DESIGN

A-frame trucks and similar job-fabricated mobile hoisting equipment must conform to this subsection and applicable provisions in the section, "Hoisting Equipment, Pile Drivers, and Conveyors." Make sure design is by a PE, and provide a written certification attesting that the equipment meets load and capability requirements.

SAFETY FACTOR

Incorporate a minimum safety factor of 5 in the design of chains, standing parts or guy cables, boom supports, and other load carrying boom (A-frame) parts. Live or running cable reeving's including boom hoist cables, shackles, hooks, and accessories must have a minimum
safety factor of 3.5.

PERFORMANCE INSPECTION AND TESTING AND CAPACITY CHARTS

Load test, at 110 percent of rated capacity, A-frame trucks and associated equipment, before use, annually thereafter, and after modification or repair. Install capacity charts on the equipment in full view of the operator.

REQUIREMENTS FOR AERIAL LIFTS

Vehicle mounted and elevating rotating aerial devices must conform to the current edition of applicable ANSI/SAE standards.

- Modification. Aerial lifts may be modified for uses other than those intended by the manufacturer, provided the modification has been certified in writing by the manufacturer or by other qualified equivalent entities such as a testing laboratory to be in conformity with the applicable provisions of the governing ANSI standard and the requirements of this section.
- Ladder trucks and tower trucks. Secure aerial ladders in the lower traveling position by a locking device on top of the truck cab and by a manually operated device at the base of the ladder before permitting the truck to travel.
- Routine testing. Elevate the boom and check the aerial lift before each shift to ensure that all controls and safety devices are functioning properly.

- Operators. Instruct and train operators in the operation of the type of equipment to which they are assigned. Allow only persons specifically authorized to operate aerial lifts to operate this type of equipment.
- Safety harness. Employees working from an aerial lift must wear a safety harness and a lanyard attached to the basket, platform, or boom. They must stand on the floor of the basket or platform and must not sit or climb up on the guardrail or enclosure. Do not allow planks, ladders, or other devices to be used as work platforms.
- Load limits. Post load limits specified by the manufacturer on the equipment and do not allow the limits to be exceeded. The date of the most recent load test must be posted or stenciled on the equipment.
- Stabilization. Stabilize aerial lifts against movement or overturning in accordance with the manufacturer's recommendations.
- Moving. Do not move aerial lift trucks, except for equipment specifically designed for that purpose, when the boom is elevated with people in the basket or on the work platform.
- Controls. Provide both platform (upper) and lower controls for articulating booms and extensible boom platforms. Mount on the basket or platform within easy reach of the operator. Design lower controls to override the upper controls. Plainly marked controls as to their function.
- A person familiar with the machine lower controls must be on the ground in the vicinity of the aerial lift at all times when employees are elevated.
- Do not operate lower controls without permission from the employee in the lift, except in an emergency.
- Insulated booms
- Testing and certification. Test and certify any aerial device or component
- thereof that is represented by the manufacturer or installer as being
- insulated, as set forth in ANSI A92.2, Section 5, "Pre-delivery Testing and
- Inspection of New Aerial Devices."
- Operation. Test, operate, and maintain the insulated aerial lifts, when used to work on or near high-voltage lines or equipment, in strict compliance with the manual or manuals provided by the manufacturer. The manual(s) must contain:
- Descriptions, specifications, and capacities of the aerial device
- Instructions for installing or mounting the device
- Operating pressure of any hydraulic or pneumatic system that is part of the
- aerial device
- Specific instructions regarding field testing, operation, and maintenance
- Replacement part information
- Manufacturer's Certification Test
- Alteration. Do not insulate portions of the lift, basket, and boom in any manner that might reduce its insulating value

XIII. REQUIREMENTS FOR OTHER MECHANIZED CONSTRUCTION EQUIPMENT STANDARDS

In addition to specific requirements set forth elsewhere in this manual, the requirements set forth in this subsection apply to all stationary mechanized equipment and drives.

GUARDING
Guard or isolate belts, gears, shafts, pulleys, sprockets, spindles, drums, flywheels, chains, or other reciprocating, rotating, articulating or moving parts of equipment to protect people and property. Guarding must comply with the standards set forth in the current edition of ANSI B15.1, "Safety Standard for Mechanical Power Transmission Apparatus."

WORKING PLATFORMS
Provide equipment with adequately designed working platforms, guardrails, and accessories so that operating and maintenance personnel will have a safe footing.

FUEL TANKS
Locate fuel tanks shall be located so that spills or overflows cannot contact the engine, exhaust, or electrical parts.

REMOVAL OF GUARDS
Do not remove or render ineffective guards and safety devices except for necessary repairs or maintenance and then only after isolating the power. Replace the guards and safety devices and make them operable before restarting the equipment.

HOT SURFACES
Either isolate, guard, or insulate hot surfaces of equipment, including exhaust pipes and steam pipes to prevent contact by personnel.

EXHAUST FUMES
Confine or control exhaust or discharges from equipment so that they do not endanger personnel or obstruct the operator's view.

ROCK CRUSHERS
Screen rock crushers and similar equipment to prevent flying chips or rocks from injuring personnel in their vicinity.

VIBRATING AND ROCKER SCREENS
Equip vibrating or rocker screens with sides and baffles to prevent rock from falling from the screen. Where materials are being processed dry, install exhaust systems to remove the dust.

LOCKOUT/TAGOUT
Install power-driven equipment with provisions for locking out the controls or switches while under repair. Establish an effective lockout and tagout program in accordance with the section, "Control of Hazardous Energy," prescribing specific responsibilities and procedures to be followed by the person(s) performing the repair work. Lock out and tag this type of equipment during repair.

CERTIFICATION
Certify the design of all major facilities and equipment built or provided by Reclamation or the contractor for Reclamation's use, such as conveyors, materials handling systems, hoists,
personnel hoists, man skips, and concrete forming support systems for major structures as structurally suitable for the use intended. The manufacturer or a PE must submit a written certification before the erection or use of such facilities and equipment on the job site. (Refer to relevant sections of this manual and specifications for information on additional requirements.)

XIV. REQUIREMENTS FOR ROADS

Design all roads, including haul roads, on the project site in accordance with the requirements contained in this section. Do not move any mobile equipment on any road, accessway, or grade unless the roadway widths, grades, and curves are constructed to safely accommodate the movement of the vehicle or equipment at the speeds that are appropriate.

HAUL ROAD SUBMITTALS
Submit the design of haul roads for acceptance by the office head before beginning road construction.

GRADES
The maximum allowable grade is 12 percent. Loading and dumping ramps may be exempted if all of the following conditions exist:

- The ramp grade does not exceed the lesser of: 25 percent
- Manufacturer's recommended maximum grade for the equipment
- The maximum grade on which the machine, when loaded to the manufacturer's specified gross weight, can be safely stopped and held
- Acceptable machine gear range and ground speed for safely descending and stopping on the ramp have been determined by field testing or provided by the manufacturer.
- A JHA has been developed, and the office head has approved the action.

LOADING AND DUMPING RAMPS
Loading and dumping ramps are defined for the purpose of this subsection as follows:

- Sections of haul roads immediately adjacent to loading and dumping areas and the loading site.
- Ramp sections that are less than 200 feet long, with a lower end that either stops on level ground no closer than 200 feet from foot traffic or congested equipment areas, or (2) is not directly aligned to terminate into these areas.

CURVES
Design all curves to have open sight lines and as great a radius as practical.

EMBANKMENT PROTECTION
Construct or install berms, curbs, or barricades to prevent vehicles or equipment from overrunning the edge or the end of the embankment when a difference in road or working level exists.

Construct berms or curbs to one-half the diameter of the tires of the largest piece of equipment using the roadway.

DRAINAGE
Design roadways to be constructed with a slight crown and with ditches provided to facilitate drainage.

POSTING SPEED LIMITS
Post all roads, including haul roads, with curve signs and maximum speed limits. Limit vehicle speeds on curves to those which permit the vehicle to be stopped within one-half the minimum sight distance. Post all curves with acceptable speed limits.

SINGLE-LANE HAUL ROADS
Provide adequate turnouts on single-lane haul roads with two-way traffic. When turnouts are not practical, provide a traffic control system to prevent accidents. Advise all personnel of the traffic control system and operating restrictions.

TWO-WAY HAUL ROADS
Whenever possible, use a right-hand traffic pattern on two-way haul roads. Install signs and traffic control devices to safely control travel when a right-hand traffic pattern is not feasible.

TRAFFIC CONTROL DEVICES
The employer must install traffic control devices including signal lights, signs, and barricades, or provide trained traffic flagpersons to ensure the safe movement of traffic. Refer to applicable portions in the section, "Signs, Signals, and Barricades."

ROAD MAINTENANCE
Routinely maintain all roadways, including haul roads, in safe condition and eliminate or control dust, ice, and similar hazards. Whenever dust conditions exist, provide adequate dust control equipment on the jobsite and ensure that it is used to control the dust.