JOB HAZARD ANALYSIS (JHA)

Business name

Document: JHA-001 Rev 1
Prepared: Nov 9, 2026
Review by: Dec 9, 2026
Highest risk after controls: Medium

1. BUSINESS AND JOB DETAILS

Job	Rooftop unit replacement	**Start date**	Nov 9, 2026
Working hours	7:00 am to 3:30 pm	**Trade**	HVAC

2. JOB STEPS, HAZARDS AND CONTROLS

#	Job step	Hazards	Risk before	Controls	Risk after	Responsible
1	Plan the crane lift and close the area below	Crane and lifting failure Public entering the work area Contact with overhead power lines Rules: 29 CFR 1926 Subpart CC; 29 CFR 1926.1408 and 1926.416	**High Possible / Serious injury**	1.1 Barricade the lift zone and keep everyone out from under the load. [Engineering (guarding)] 1.2 Use a crane rated for the load at the radius, set up on firm ground with outrigger pads. [Engineering] 1.3 Check slings, chains, shackles and hooks before use. Remove anything damaged or not tagged. [Engineering] 1.4 Plan the lift: weight, radius, ground, path and landing area. Use a written lift plan for complex lifts. [Administrative] 1.5 Use a certified crane operator who has also been evaluated by the employer, with the evaluation documented on site (29 CFR 1926.1427), plus a qualified rigger (1926.1425) and a qualified signal person (1926.1428). [Administrative] 1.6 Fence off the site with secure temporary fencing and lock the gates when you leave. [Engineering (guarding)] 1.7 Give pedestrians a safe, marked path around the work, with ramps for strollers and wheelchairs. [Engineering (guarding)] 1.8 Use hoarding, covered walkways or catch fans where work is above public areas. [Engineering] 1.9 Put signs at each entry: site name, contact number and "No unauthorized entry". [Administrative] 1.10 Make the site safe at the end of each day: cover holes, lower plant, remove ladders and lock tools away. [Administrative] 1.11 Ask the utility to de-energize, move or insulate the lines before work starts. [Elimination] 1.12 Use non-conductive (fiberglass) ladders near any power lines. [Substitution] 1.13 Mark the safe distance with flags, tape or warning lines and keep all equipment and people outside it. [Engineering (guarding)] 1.14 Keep equipment at least 10 feet from lines up to 50 kV once the utility confirms the voltage, more for higher voltages, and 20 feet when the voltage is unknown (29 CFR	**Medium Rare / Fatality**	Site supervisor

#	Job step	Hazards	Risk before	Controls	Risk after	Responsible
				1926.1408). [Administrative] 1.15 Use a dedicated spotter whenever equipment moves or raises anything near lines. [Administrative] 1.16 Treat all lines as energized. If equipment touches a line, the operator stays in the cab and everyone else keeps well away. [Administrative]		
2	Set up roof edge protection or harness anchors	Falling from a roof edge Falling through a fragile roof or skylight Rules: 29 CFR 1926 Subpart M	**Critical Likely / Fatality**	2.1 Do what you can from the ground or from a scaffold at the gutter line, for example pre-assemble parts on the ground. [Elimination] 2.2 Install edge protection or guardrails on all open roof edges before work starts. [Engineering (guarding)] 2.3 Use a perimeter scaffold with handrails and toe boards along the eaves where practical. [Engineering] 2.4 Where guardrails cannot be fitted, use fall restraint on certified roof anchors so workers cannot reach the edge. [Engineering] 2.5 Low-slope roofs: guardrails, safety nets, personal fall arrest, or a warning line combined with one of these or with a safety monitor (a safety monitor alone only on roofs 50 feet wide or less). Steep roofs: guardrails with toe boards, safety nets or personal fall arrest (29 CFR 1926.501(b)(10), (11)). [Administrative] 2.6 Use one safe, controlled access point and keep others off the roof. [Administrative] 2.7 Stop roof work in strong wind or rain, and when the roof is wet, icy or covered in dust or frost. [Administrative] 2.8 Wear a harness clipped to a rated anchor when using restraint or fall arrest, and soft-soled non-slip boots. [PPE] 2.9 Work from underneath or from an aerial lift so nobody stands on the fragile roof. [Elimination] 2.10 Cover every skylight with a fixed, marked cover that can hold at least twice the weight it may carry, or guard it with a guardrail. [Engineering (guarding)] 2.11 Use crawl boards or staging to spread the load on fragile or rotten decking, and cover or guard any hole left where decking is removed (29 CFR 1926.501(b)(4)). [Engineering] 2.12 Use fall arrest on rated anchors when working near fragile areas. [Engineering] 2.13 Treat all roof sheets as fragile until a competent person confirms they are not. Old fiber cement and plastic sheets are fragile. [Administrative] 2.14 Put "Fragile roof" signs at every roof access point. [Administrative] 2.15 Never walk on sheets between purlins or along skylights. Stay on boards or staging. [Administrative] 2.16 Wear a full body harness clipped to a rated anchor. [PPE]	**Medium Rare / Fatality**	Site supervisor

#	Job step	Hazards	Risk before	Controls	Risk after	Responsible
3	Isolate power and gas, apply lockout/tagout	Electric shock from live wiring Gas and fuel lines Rules: 29 CFR 1926 Subpart K	**Critical Possible / Fatality**	3.1 Isolate the power before any work. Do not work live. [Elimination] 3.2 Lock out and tag the disconnecting means with your own personal lock and tag so the circuit cannot be energized (29 CFR 1926.417). [Engineering (guarding)] 3.3 Test before you touch: prove dead at the point of work with a tested voltage tester. [Engineering] 3.4 Only qualified persons work on or near exposed energized parts. [Administrative] 3.5 Check for back feeds from solar, batteries and generators that can keep a circuit live after the main switch is off. [Administrative] 3.6 If energized work cannot be avoided, use an energized work permit, a safety observer and insulated tools, following NFPA 70E. [Administrative] 3.7 Wear insulated gloves, arc-rated clothing and a face shield when testing or working near live parts. [PPE] 3.8 Isolate and purge the line before work, with the owner's approval. [Elimination] 3.9 Lock off and tag the isolation valve. [Engineering (guarding)] 3.10 Check for leaks with a gas detector before and during work, and ventilate the area. [Engineering] 3.11 Only licensed gas fitters work on gas lines. [Administrative] 3.12 Remove ignition sources: no smoking, no hot work and no sparking tools near the line. [Administrative] 3.13 Know where the shut-off valve is and what to do if a leak happens. [Administrative] 3.14 Wear safety glasses and gloves, and keep a fire extinguisher close by. [PPE]	**Medium Rare / Fatality**	Site supervisor
4	Recover refrigerant before disconnecting	Refrigerant leaks Rules: 40 CFR Part 82 Subpart F (Section 608)	**Medium Unlikely / Serious injury**	4.1 Recover refrigerant into an approved cylinder before opening the system. Never vent it. [Engineering (guarding)] 4.2 Ventilate closed spaces and use a leak detector during the work. [Engineering] 4.3 Only EPA Section 608 certified technicians handle refrigerants. [Administrative] 4.4 With flammable refrigerants (such as R32 or R290), remove ignition sources and use spark-free tools. [Administrative] 4.5 Wear cold-rated gloves and safety glasses or a face shield. [PPE]	**Low Rare / Serious injury**	Site supervisor
5	Lift out the old unit and set the new one, keeping clear of the load	Crane and lifting failure Falling tools and materials Strong wind and storms Rules: 29 CFR 1926 Subpart CC; 29 CFR 1926.501(c)	**High Possible / Serious injury**	5.1 Use tag lines to control loads and agree on clear radio or hand signals. [Administrative] 5.2 Stop lifting in high wind or when the operator cannot see the signal person. [Administrative] 5.3 Never ride on a load or hook. [Administrative] 5.4 Crane and lifting failure: see step 1 for the full controls	**Medium Unlikely / Serious injury**	Site supervisor

#	Job step	Hazards	Risk before	Controls	Risk after	Responsible
				[Administrative] 5.5 Barricade and sign the drop zone under overhead work so nobody walks beneath. [Engineering (guarding)] 5.6 Fit toe boards, kick plates and mesh screens on scaffolds and edges. [Engineering] 5.7 Use catch fans, debris netting or covered walkways where people pass below. [Engineering] 5.8 Tether hand tools when working at height. [Engineering] 5.9 Keep platforms tidy. Do not stack materials near edges or above toe board height. [Administrative] 5.10 Check the forecast each morning and plan work at height and lifting around the weather. [Elimination] 5.11 Tie down or weigh down loose sheets, panels, boards and rubbish at the end of each shift. [Engineering] 5.12 Set wind limits for roof work, platforms and cranes, using the manufacturer's limits, and stop when they are reached. [Administrative] 5.13 Stop work and get down in lightning. Wait 30 minutes after the last thunder before going back up. [Administrative] 5.14 Check scaffold, fencing and edge protection after strong wind before anyone uses them. [Administrative]		
6	Connect, commission and clean the roof	Electric shock from live wiring Poor housekeeping and waste Rules: 29 CFR 1926 Subpart K	**Critical Possible / Fatality**	6.1 Electric shock from live wiring: see step 3 for the full controls [Administrative] 6.2 Order materials to size and send packaging back where you can. [Elimination] 6.3 Put dumpsters and waste chutes close to the work. [Engineering] 6.4 Clean as you go, and do a full clean up at the end of each day. [Administrative] 6.5 Keep exits, stairs and walkways clear at all times. [Administrative] 6.6 Stack materials neatly on level ground, away from edges. [Administrative] 6.7 Wear gloves when handling waste. [PPE]	**Medium Rare / Fatality**	Site supervisor

Risk key: risk = likelihood x consequence on a 5 x 5 matrix. Low, Medium, High, Critical. Work must not start while the risk after controls is high or above. Controls are listed in order of the hierarchy of controls: Elimination, Substitution, Engineering (guarding), Engineering, Administrative, PPE.

3. PPE AND PERMITS

Required PPE	Permits and plans
Safety-toe boots (ASTM F2413) Hard hat (ANSI Z89.1) Personal fall arrest system (harness) High-visibility safety apparel, ANSI/ISEA 107 Class 2 or 3 (Type R near roadways) Work gloves	Critical lift plan Written fall protection plan (only where guardrails, nets or personal fall arrest are not feasible, 1926.502(k)) Lockout/tagout (1926.417)

Required PPE	Permits and plans
Safety glasses (ANSI Z87.1) Sun protection (sunscreen, hat, long sleeves) Rubber insulating gloves Arc flash PPE (NFPA 70E) Face shield (ANSI Z87.1)	

4. PLANT AND EQUIPMENT

Plant / equipment	License or training needed	Inspection needed	Rego / ID	Last inspected	Certificate / report
Mobile crane	Operator certified by an accredited body or audited employer program (29 CFR 1926.1427) and evaluated by the employer, with a signed evaluation on site (1926.1427(f)); qualified rigger (1926.1425) and qualified signal person (1926.1428)	Shift inspection by a competent person (29 CFR 1926.1412(d)), documented monthly inspection (1926.1412(e)) and annual inspection by a qualified person (1926.1412(f))			
Hand tools					
Electrical test meter		Rated for the voltage and category (CAT III or IV), inspected before each use, and checked on a known source before and after testing (NFPA 70E)			
Extension ladder		Inspected by a competent person for visible defects periodically and after any event that could affect safe use (29 CFR 1926.1053(b)(15))			

5. TRAINING REQUIRED FOR THIS WORK

- Crane operator certification plus documented employer evaluation (29 CFR 1926.1427); qualified rigger (1926.1425); qualified signal person (1926.1428)
- Fall protection training by a competent person, with a written certification record (29 CFR 1926.503)
- Qualified person training for work on or near exposed energized parts (29 CFR 1926.416, NFPA 70E)

6. CREW TRAINING AND CERTIFICATIONS

Crew listed at sign-on below, with ticket and licence numbers.

7. EMERGENCY ARRANGEMENTS

Emergency number	911	**First aid kit**	In the work vehicle
Fire extinguisher	In the work vehicle	**Alarm and evacuation**	Shout for help and stop work. Make the area safe and go to the assembly point. Call the emergency number and send someone to meet the ambulance.
Reporting incidents	Report a fatality to OSHA within 8 hours, and an in-patient hospitalization, amputation or eye loss within 24 hours.		

8. MONITORING, REVIEW AND LEGAL BASIS

A competent person inspects the job site, materials and equipment before work each day and as conditions change (29 CFR 1926.20(b)(2)). Any time this JHA is revised, the affected crew is re-briefed and signs again.

Legal basis: OSH Act Section 5(a)(1) and 29 CFR 1926, Safety and Health Regulations for Construction (incl. 1926.20 and 1926.21). OSHA requires employers to find and fix hazards and to train workers on them. A JHA breaks the job into steps, lists the hazards in each step and the controls that protect the crew. General contractors often require one before you start.

Keep this JHA on site during the job, and keep it with the training and inspection records for at least 1 year after the job (longer if your state plan or general contractor requires it). OSHA does not set a retention period for JHAs themselves.

9. REVISION HISTORY

Rev	Date	By	What changed
1	Nov 9, 2026		First issue

10. SIGN-OFF

	Name	Signature	Date	
Prepared by				
Supervisor				
General contractor review				Accepted for use: Yes / No

By signing below, each crew member confirms they were trained on the hazards and controls in this JHA before work started, and will follow it. Stop work and tell the supervisor if conditions change.

Name	Role / company	Tickets / licences	Signature	Date

Name	Role / company	Tickets / licences	Signature	Date