SECTION 6 - TECHNOLOGY SAFETY DATA SHEET

TECHNOLOGY SAFETY DATA SHEET
FRAMATOME TECHNOLOGIES
Ingersoll-Rand 77A Air Angle Grinder
(Equipment Dismantlement)

<table>
<tr><th colspan="2">SECTION 1: TECHNOLOGY IDENTITY</th></tr>
<tr><td rowspan="3">Manufacturer’s Name and Address:

Framatome Technologies
3315 Old Forest Road
PO Box 10935
Lynchburg, VA 24506-0935</td><td>Emergency Contact:

Ken R. Palazzi

(804)832-3915</td></tr>
<tr><td>Information Contact:

Ken R. Palazzi

(804)832-3915</td></tr>
<tr><td>Date Prepared:</td></tr>
<tr><td>Other Names:
Pneumatic Grinder
“Hand-Held” Grinder
Portable Abrasive Wheel</td><td>Signature of Preparer:

Operating Engineers National Hazmat Program
1293 Airport Road, Beaver, WV 25813,
phone 304-253-8674, fax 304-253-7758

Under cooperative agreement DE-FC21-95 MC 32260</td></tr>
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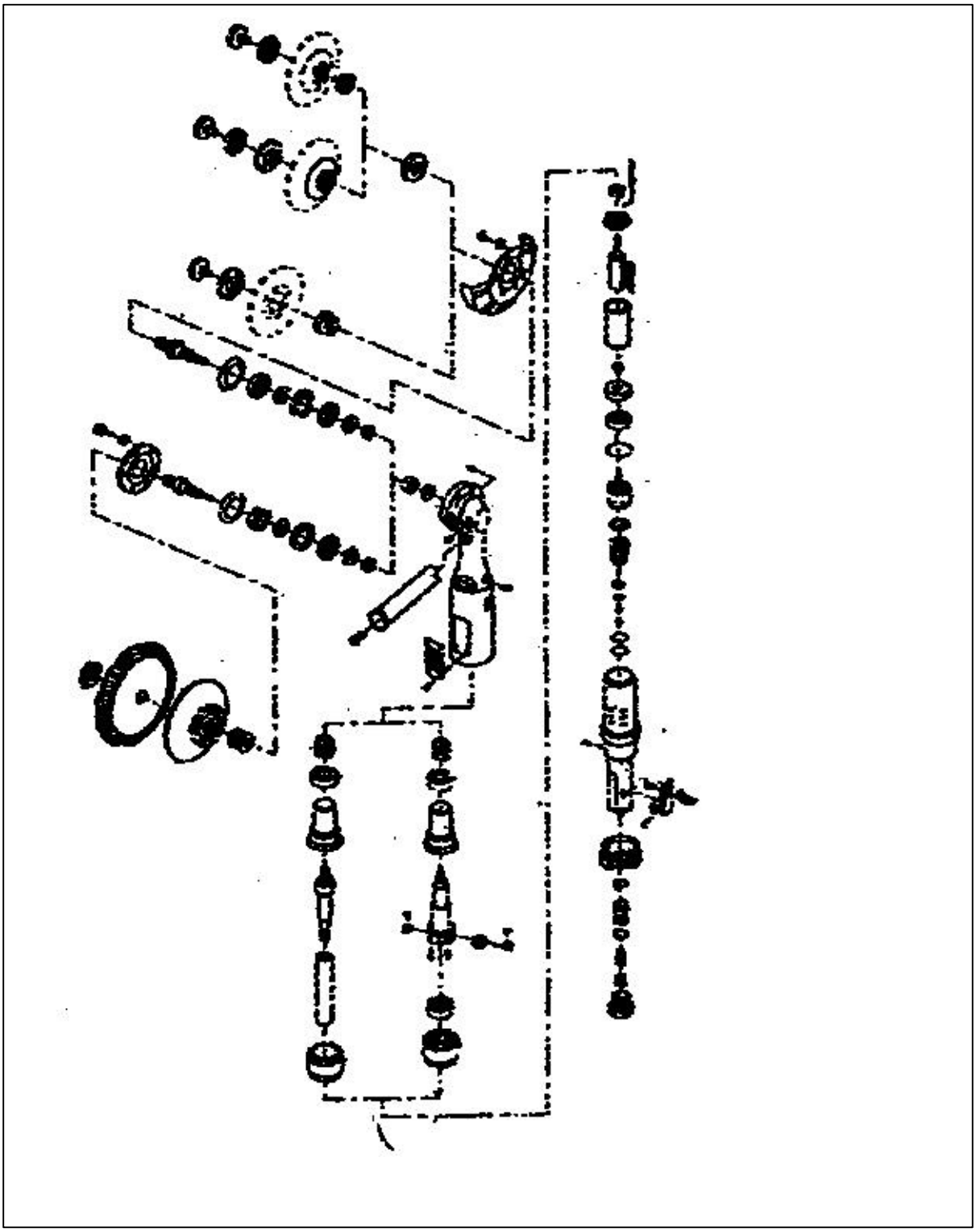
SECTION 2: PROCESS DESCRIPTION

The Framatome 77A Air Angle Grinder is a pneumatically operated “hand-held” portable abrasive tool designed for use in “close-quarters” or areas of tight access. The grinder uses a 7-inch depressed center wheel. The abrasive wheel is made of aluminum oxide. An air angle grinder with a 9-inch wheel is also available.

The grinder is designed to operate at the free speed specified on the nameplate, if the air supply is maintained at 90 psig air pressure at the tool. The free speed for the grinder is 6000 rpm. The grinder uses a ½ -inch air hose with quick connect fittings.

The grinder has a “dead handle” that attached to the left side of the grinder at a 90° angle. The handle assists the operator in guiding and maintaining control of the grinder. The handle of the grinder, which is perpendicular to the operator, has a thumb trigger for operation. This trigger acts as a “dead man” switch, if the operator releases pressure the grinder stops.

SECTION 3: PROCESS DIAGRAMS



SECTION 4: CONTAMINANTS AND MEDIA
Dust generation does not appear to be a concern with the air angle grinder. Consideration does need to be given to the metal being cut, the material the abrasive wheel is made of, and contamination in the area where the grinder is being used for D&D activities. An air sampling plan will need to be developed as appropriate for the site where the grinder is used.

SECTION 5: ASSOCIATED SAFETY HAZARDS	
Probability of Occurrence of Hazard: 1 Hazard may be present but not expected over background level 2 Some level of hazard above background level known to be present 3 High hazard potential 4 Potential for imminent danger to life and health	
A. ELECTRICAL (LOCKOUT/TAGOUT)	RISK RATING: N/A
Not part of this technology.	
B. FIRE AND EXPLOSION	RISK RATING: 4
Technology does not pose this hazard in and of itself but could not be used in an explosive environment due to sparking.	
C. CONFINED SPACE ENTRY	RISK RATING: 1
Not part of this technology unless the specific location where the grinder is being used is a confined space. In this case, confined space procedures would need to be followed.	
D. MECHANICAL HAZARDS	RISK RATING: 4
Assembling and adjusting the grinder may pose pinch points. There is potential for injury from the rotating abrasive wheel. The grinder should always be operated with the guard facing the operator. Loose clothing should not be worn when working around the grinder.	
E. PRESSURE HAZARDS	RISK RATING: 2
The airlines and high pressure air may present hazards, proper precautions indicated. The airline fittings should have safety lines connecting the male and female half of the fitting.	
F. TRIPPING AND FALLING	RISK RATING: 3
Air lines present potential hazards.	

SECTION 5: ASSOCIATED SAFETY HAZARDS (CONTINUED)	
G. LADDERS AND PLATFORM	RISK RATING: 2
Not part of this technology but may be required for D&D activities. All regulations for working from ladders and platforms, including the OSHA scaffolding standard must be followed.	
H. MOVING VEHICLE	RISK RATING: 2
Not part of this technology but may be required for D&D activities. All precautions and safety requirements for large pieces of equipment will need to be followed. For example, all moving vehicles should have working back-up alarms, warning lights, etc.	
I. BURIED UTILITIES, DRUMS, AND TANKS	RISK RATING: N/A
Not part of this technology.	
J. PROTRUDING OBJECTS	RISK RATING: N/A
Not part of this technology.	
K. GAS CYLINDERS	RISK RATING: N/A
Not part of this technology.	
L. TRENCHING AND EXCAVATIONS	RISK RATING: N/A
Not part of this technology.	
M. OVERHEAD LIFTS	RISK RATING: 2
Not part of this technology but may be required during D&D activities. All applicable standards and precautions must be followed for the type of equipment used. At a minimum, anyone in the work area should be wearing a hard hat.	
N. OVERHEAD HAZARDS	RISK RATING: 2
May be part of this technology if the piece being cut is overhead. At a minimum, anyone working in the area should be wearing a hard hat. It needs to be assured that all workers in the area are aware of the overhead work being done and avoid the area when possible.	

SECTION 6: ASSOCIATED HEALTH HAZARDS	
A. INHALATION HAZARD	RISK RATING: 1
Technology does not appear to produce dust during operation. Consideration needs to be given to the metal being cut and the material from which the abrasive wheel is made. Other hazards that may be present in the area will be identified from the site characterization.	
B. SKIN ABSORPTION	RISK RATING: 1
This would be dependent on the contaminants at the site and would be identified by the site characterization. Consideration needs to be given to the oil being used for the air lines.	
C. HEAT STRESS	RISK RATING: 1-4
Ambient conditions, work rates, and PPE levels must be considered. The sparking metal particulate will contribute to the heat load in the area.	
D. NOISE	RISK RATING: 2
The technology presents a potential noise hazard.	
E. NON-IONIZING RADIATION	RISK RATING: N/A
Not part of this technology.	
F. IONIZING RADIATION	RISK RATING: 1-4
Not part of this technology, but may be associated with the area where D&D activities are taking place.	
G. COLD STRESS	RISK RATING: 1
Technology does not produce a hazard, but ambient conditions need to be considered.	
H. ERGONOMIC HAZARDS	RISK RATING: 3
Poses ergonomic hazards associated with lifting, bending, twisting, stooping and kneeling. These may cause injury/strain to the back, shoulders, arms, knees, hips and/or legs.	
I. OTHER	RISK RATING: 3
Exposure to vibrating tools (hand-arm vibration) has the potential to cause problems such as Raynaud’s Syndrome (vibration white finger).	

SECTION 7: PHASE ANALYSIS
A. CONSTRUCTION/START-UP
The set-up/start-up phase presents several hazards including pinch points, laceration hazards, slips/trips/falls, struck by, and muscular/back injury.
B. OPERATION
The operational phase presents several hazards including exposure to contaminant, muscular/back injury, pinch points, laceration hazards, slips/trips/falls, pinch points, struck by hazards, exposure to noise, and hand-arm vibration.
C. MAINTENANCE
The maintenance phase presents several hazards including pinch points, laceration hazards, slips/trips/falls, muscular/back injury, exposure to contaminants, and accidental activation of moving parts.
D. DECOMMISSIONING
The decommissioning phase presents several hazards, including exposure to the contaminant, pinch points, laceration hazards, slips/trips/falls, and muscular/back injury.

SECTION 8: HEALTH AND SAFETY PLAN REQUIRED ELEMENTS
A. AIR MONITORING
Dust does not appear to be a concern during operation of the grinder. Monitoring may need to be conducted for the metal the pieces are made of, the material the abrasive wheel is made of, and contaminants in the area where the D&D activities take place. This will be determined by the site characterization prior to the initiation of the D&D project. Noise monitoring will need to be conducted.
B. WORKER TRAINING
Training that may apply in this case may include but not be limited to: HAZWOPER (Hazardous Waste Operations and Emergency Response), HAZCOM (Hazard Communication), Respiratory Protection, PPE (Personal Protective Equipment) Training, Hearing Conservation, Ergonomics (proper lifting, bending, stooping, kneeling, hand-arm vibration), specific training for equipment operation, CPR/First Aid/Emergency Response/Bloodborne Pathogens, Lockout/Tagout, Hand Signal Communication, and Construction Safety (OSHA 500) and/or General Industry Safety (OSHA 501).
C. EMERGENCY RESPONSE
Emergency response planning for a site needs to assure adequate coverage for hazards described in the TSDS. Having at least one person per shift trained in CPR and first aid is recommended.
D. MEDICAL SURVEILLANCE
Evaluation of personnel’s general health with emphasis on the cardiovascular and

SECTION 8: HEALTH AND SAFETY PLAN REQUIRED ELEMENTS
respiratory system, back, and peripheral nervous system. In addition, medical surveillance as required by OSHA standards must be conducted. Initial and annual audiograms may be required.
E. INFORMATIONAL PROGRAM
Workers must be trained in specific operation of equipment before use.

SECTION 9: COMMENTS AND SPECIAL CONSIDERATIONS
Only personnel who have been adequately trained in the operation of this technology should be permitted to operate and/or work with the equipment.