Arkansas Department of Health
Radiation Control Section
Radioactive Materials Program

WORKER PROTECTION PLAN / WASTE MANAGEMENT PLAN GUIDANCE FOR GENERAL LICENSE OIL/GAS OPERATORS*

ITEM *Please provide a copy of this checklist with your submittal.	STATUS (note section or page #)
1. Notification of a NORM Facility Form completed?	
2. NORM-GL Fee included? ($500, initial or annual)	
3. Notification Form Specifics Provide survey and sampling dates and who performed.	
a. Equipment exposure readings – max, locations, comprehensive?	
b. Land or solids exposure readings – max, locations, comprehensive?	
c. Boundary of NORM storage areas – max, locations, comprehensive?	
d. Concentrations (Ra-226 and 228, other NORM nuclides) – solid, sludge, liquid, background; locations, comprehensive?	
e. Confirmatory survey performed by qualified individual – NORM SURVEYOR or FIELD SUPERVISOR/RSO (may be a Vendor Service Registrant with these qualifications)(includes sampling)	
f. Listing of wells – Those in production, "active" but not producing, and "inactive," indicate those with NORM not exempted; Indicate sites where NORM and/or NORM-contaminated equipment, not in use, is stored (including storage ponds/pits/basins, tanks, roll offs, drums, etc.)	
4. NORM Users Identified by Title/Job Duties (most likely to encounter NORM)	
5. Classroom Training and OJT Assigned by Rule – for each type of user	
a. Classroom training received from approved Vendor (VS#) or university or state/nationally-recognized organization, accepted by ADH, training course	
b. Vendor file(s) are current, authorization is specific, and fee is paid	
c. Assessment/test, adequate	
d. OJT received from (NA for NORM workers)	
e. Documentation provided for all NORM RSOs, NORM Field Supervisors, NORM Surveyors, and NORM Workers (initial training – classroom and OJT)	
6. NORM Radiation Safety Officer	

a. Name	
b. Training and experience (see Item 5)	
c. Duties/responsibilities and authorities described (including recordkeeping)	
d. Annual audit of radiation protection program (RH-1004)	
e. Companies contracted to for any services involving NORM (other than training); must have Vendor Service Registration or Specific License, as appropriate	
7. Personnel Training Program	
a. DOT/49 CFR Training (RSO and any other "hazmat employees") in accordance with Part 172, Subpart H	
b. Refresher Training For Users Described (annual and upon changes considered part of adequate Radiation Safety Program; covers procedures) – can be given by qualified NORM RSO (RH-1004, 2803)**	
c. Ancillary/Awareness Training (initial and as needed refresher considered part of adequate RSP) – can be given by qualified NORM RSO (RH-1004)(includes company employees and visiting contractors – those not working directly with NORM and have no potential for exposure but have access)**	
**If in-house training not sufficient to satisfy the rules, formal training per a Vendor would be required.	
8. Radioactive Material	
a. NORM most likely to be found where?	
b. Any radioactive material other than NORM onsite?	
9. Radiation Detection Instruments	
a. Radiation Survey Instruments	
(1.) Type of Instruments (exposure rate and contamination)(RH-6017)	
(2.) Manufacturer/Model Number	
(3.) Number Available	
(4.) Radiation Detected	
(5.) Sensitivity Range (recommend 5 mR/hr at least – for Dose to Member of the Public compliance and to identify possible Radiation Area)	
(6.) Use of Instruments	
b. Other Detection Equipment	
(1.) Type of Instrument (RH-1300)	
(2.) Manufacturer/Model Number	
(3.) Number Available	
(4.) Radiation Detected	
(5.) Sensitivity Range	

(6.) Use of Instrument	
c. Loaner availability, if only 1 of each type	
10. Detection Instrument Calibration	
a. Radiation Survey Instruments	
(1.) Annually, when damaged or responding inconsistently, and after servicing (RH-6017.b.1.)	
(2.) Calibration Performed IAW RH-6017.b. and against a radioactive source	
(3.) Calibration Performed By (VS#)	
Vendor file(s) are current, authorization is specific, and fee is paid	
b. Other Detection Equipment	
(1.) At intervals in RH-1300.c.	
(2.) Calibration Performed IAW RH-1300.c.	
(3.) Calibration Performed By (VS#)	
Vendor file(s) are current, authorization is specific, and fee is paid	
c. Maintain calibration certificates	
11. Personnel Monitoring	
a. External Dose Most common during?	
(1.) Type of Dosimeter and Monitoring	
(2.) Exchange Frequency	
(3.) Provided By Vendor (VS#)	
Vendor file is current, authorization is specific, and fee is paid	
(4.) External Dose Monitoring Not Required; Justification Provided	
b. Internal Dose Most common during?	
(1.) Type Monitoring Performed	
(2.) Technical Description Provided	
(3.) Provided by Vendor (VS#)	
Vendor file is current, authorization is specific, and fee is paid	
(4.) Internal Dose Monitoring Not Required; Justification Provided	
c. Summation of External and Internal Dose procedure	

d. Declared Pregnant Woman procedure available and shared with applicable workers (when to monitor – int + ext, how and purpose of declaring, dose equivalent limits)	
e. Records of Personnel Monitoring	
12. Facilities and Equipment	
a. Security/Control to Prevent Unauthorized Access to or Removal of Regulated NORM – stored/containerized NORM, stored Out of Service NORM-contaminated equipment, and stored tubular goods and pipe (RH-1306, 1308)	
b. Restrict Access at 2 mR/hr at the surface/any accessible area (or lesser action level) of equipment in use/production and Out of Service NORM-contaminated equipment reasonably unable to be stored and tubular goods and pipe reasonably unable to be stored	
c. Non-radiological hazards on-site	
d. PPE, plastic sheeting, etc. as appropriate	
e. Posting of Notices to Workers (RH-2802)	
13. Conducting and Receiving a Transfer (NORM-contaminated equipment from one of the GL's sites to another of their sites, or one GL to another IAW RH-6010.f.)	
NORM assessment, RSOs notified, other individuals involved (training and experience), containers/packaging used, contamination control methods, surveys, DOT requirements if applicable	
14. Disposal of NORM	
a. Transfer to Authorized Recipient (RH-6013.c.)	
(1.) Through specific licensee via reciprocity (post decontamination - RH-6020.b.)	
(2.) Through specific licensee via Vendor registration – basic pick up only (verify with ADH), no decon allowed	
(3.) Must be licensed to perform requested services	
b. Release in Effluents (RH-6012)	
c. Produced Water injected into saltwater disposal well? During fracturing as well? How many SWD?	
d. Flow Back/frac fluid returns are stored then disposed of in what manner?	
e. Disposal Methods: Per EPA requirements, licensed land disposal facility, or alternate method authorized by ADH (RH-6013.a.)	
f. Maintain records of disposal for the duration of the license	
15. Transportation of NORM	
a. DOT Regulations Will Be Followed: when packaging, offering package to a carrier, and transporting NORM (when in commerce)	
b. Certified Manifest required for each shipment of NORM waste or NORM-contaminated equipment to a facility specifically licensed for treatment, decontamination, storage, or disposal (IAW RH-6016)	
16. Operating Procedures – WPP (RH-6019)	
a. ALARA and Safe Use Procedures Commitments - time, distance (including remote handling), and shielding; engineering/admin	

controls (wetting, ventilation, restrict access); ways to minimize spread of NORM (minimum number of people in contaminated area, seal openings on contaminated equipment or containers, cap tubulars on both ends, etc.); no eating/smoking/chewing/drinking, removing protective clothing prior to exit, washing body parts potentially contaminated before leaving work area, etc.	
b. Dose to Members of the Public (MOP) Procedures – description of individuals and situations where a MOP could potentially receive dose, assessment provided and maintained (surveys/calculations)	
c. Posting Procedures –stored/containerized NORM area, stored Out of Service (OOS) NORM-contaminated equipment, and stored tubular goods and pipe are posted with Caution: Radioactive Materials; all NORM areas/equipment/containers/tubular goods/pipe must be posted Caution: Radiation Area IAW RH-1303.b., if the criteria are met; [purposes for restricting access, posting, and labeling – for ALARA and accountability, prevent exceeding MOP limits, prevent improper release or disposal]	
d. Labeling Procedures – for in use/production, a metal tag, plastic placard, spray painted information on equipment/tubular goods/pipe with NORM contamination > 50 microR/hr at any accessible point (in consideration of ALARA)(note App. A for release); if OOS equipment, label IAW RH-1309 (labeling isn't required for tubular goods/pipe in storage); if containerized NORM, label IAW RH-6014.g.	
e. Personnel Monitoring Equipment Use Procedure (see Item 11)	
f. Personnel Survey/Exit Procedures from a NORM-contaminated area (NORM Worker can do as well, limit of background)	
g. Personnel Decontamination Procedures, including disposal of resultant waste (as part of on-site/routine maintenance or an incident)(dry/wet)(NORM Worker can do as well)	
h. Equipment Survey/Exit Procedures from a NORM-contaminated area and Facility/Area Survey Procedures (50 microR/hr and compliance with Appendix A to Section 7 to release for unrestricted use – requires qualified individual as in 16.i.)(Areas – ALARA and to confirm < 2 mR/hr for routine/on-site maintenance)	
i. Equipment/Facility Decontamination Procedures, including disposal of resultant waste (as part of on-site/routine maintenance ONLY or an emergency)(basic dry/wet decon or storage)(NORM Worker may have a role, if working with a NORM Surveyor)	
j. Land Survey Procedures (action level and action to be taken)(land release survey, for unrestricted use, must be performed by qualified individual – NS or FS/RSO – then approved by ADH)(may be a Vendor Service Registrant with these qualifications)	
k. Airborne Contamination Survey Procedures (air sampling)(action level and action to be taken)(see Item 11 and 16.r.)	
l. How often confirmatory surveys will be repeated (scheduled; whenever activities at the site could result in a possible change in the regulatory status of the site, RH-1300.a.1.)	
m. General Survey Items (ensuring current calibration, operability check, battery check, background determination, limitations, distance away and scan speed for land and equipment/structures, count time, verify units, identification of hot spots, instrumentation Minimum Detectable Concentrations must be met, Appendix A, grid/map, documentation, etc.)	
n. General Sampling Items (background determination, Appendix A for wipes, prep, what prompts collection (prior to cleaning vessels, prior to disposal, prior to unrestricted release, leak/spill response, assess a hazard, ensure compliance with MOP limits), how to handle hot spots (grid placement), map, collection (amount needed, cleaning tools between samples, samples should be statistically representative of the entire area's contamination level), packaging, chain of custody, sent to approved lab, etc.)	
o. General Counting Items for removable contamination (ensuring current calibration, operability	

check, battery check, background determination, limitations, distance away, verify units and calculation of dpm/100 sq cm, scalers, MDC's being met, Appendix A, analysis report, etc.)	
p. Limits (surveys, sampling, removable contamination), more conservative than Section 3 and/or 7?	
q. "Operations that might involve the spread of NORM or the potential for internal dose to the worker and how each operation should be handled" // describe all on-site/routine maintenance activities (allowed if < 2 mR/hr at any accessible point of the work area)	
r. Respiratory Protection Program Procedures – potential for dusts/loose contamination not contained with engineering controls likely signals need for a Specific Licensee to do the work (would be considered non-routine, as well as additional exposure or a new route of exposure)(see 16.k.)	
s. Radon assessment conducted? (RH-6011 protects workers)(Issues with Pb-210 plating out in propane tanks, etc.?)	
t. Procedures made available to workers? (RH-2802.a.3.)	
17. Operating Procedures – WMP (RH-6010-6015, etc.)	
a. Storage of *remediated* NORM waste – allowed for 90 days unless have WMP – then may allow up to 1 year; non-remediated waste may be stored IAW the Rule until site to be released for unrestricted use; what NORM-containing or contaminated equipment/products/byproducts are currently being stored and in what manner (see 3.f.)	
b. "NORM and NORM waste shall be kept in a container that is in good and safe condition." (RH-6014.a.). Piles of NORM waste are prohibited.	
c. Container requirements (RH-6014)	
d. Quarterly Inspections of Containerized NORM, including how the container is stored (on pallets, off the ground, under cover; steel drum not on ground, polypropylene drum not in sunlight); records (5 years)	
e. Posting and Labeling (see WPP)	
f. Schedule and Procedure for Inspection of Tanks containing NORM – leaks, cracks, corrosion, erosion, wall thinning; records (RH-6015)	
g. NORM waste handling and how stored for eventual disposal	
h. Stored NORM Area Survey Procedure; records (5 years)	
i. Method of compliance with Dose to Member of the Public limits and ALARA	
j. Action Levels; actions to be taken	
k. Procedures made available to workers? (RH-2802.a.3.)	
18. Emergency Procedures	
a. Relevant Emergency Procedures involving NORM (leaks/spills/releases, personnel contamination and decontamination, loss or theft of NORM, transportation accidents, fire or natural disasters, personnel injury, etc.)	
b. Notifications to whom; contact information made available	
c. Procedures made available to workers? (RH-2802.a.3.)	