License: 25-27488-01
Docket: 030-33433

CALUMET
Montana Refining, LLC
1900 10th Street NE Great Falls, MT 59404
Phone: 406-761-4100 Main Fax: 406-761-0174 Refinery Building Fax: 406-761-0777 www.calumetspecialty.com

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1. Calumet Montana Refining LLC
2. 1900 10th Street N.E. Great Falls, MT. 59404-1955
3. (Same)
4. (Same)
5. (Same)
6. A, B, C, D,E (SAME)
7. A, B, C, D,E (SAME)
8. A, B, C, D,E (SAME)
9.
   a. For level detection and density for controlling of produce and material in compatible ThermoFisher Scientific or equivalent nuclear fixed gauging devices in accordance with the certificate of registration issued by the U.S. Nuclear Regulatory Commission under 10 CFR 32.210 or with an Agreement State and which have been distributed in accordance with a Commission or Agreement State specific license authorizing distribution to persons specifically authorized by Commission or Agreement State license to receive, possess and use the devices..
   b. For level detection and density for controlling of produce and material in compatible ThermoFisher Scientific or equivalent nuclear fixed gauging devices in accordance with the certificate of registration issued by the U. S. Nuclear Regulatory Commission under 10 CFR 32.210 or with an Agreement State and which have been distributed in accordance with a Commission or Agreement Site specific license authorizing distribution to persons specifically authorized by a Commission or Agreement State license to receive, possess and use the devices.
   c. For level detection and density for controlling of produce and material in compatible ThermoFisher Scientific or equivalent nuclear fixed gauging devices in accordance with the certificate of registration issued by the U. S. Nuclear Regulatory Commission under 10 CFR 32.210 or with an Agreement State and which have been distributed in accordance with a Commission or Agreement State specific license authorizing distribution to persons specifically authorized by a Commission or Agreement State license to receive, possess and use the devices.

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NON-PUBLIC
☐ A.3 Sensitive-Security Related
☐ A.7 Sensitive Internal
☐ Other:

Reviewer: [illegible] Date: 1/5/15

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d. For level detection and density for controlling of produce and material in compatible ThermoFisher Scientific or equivalent nuclear fixed gauging devices in accordance with the certificate of registration issued by the U.S. Nuclear Regulatory Commission under 10 CFR 32.210 or with an Agreement State and which have been distributed in accordance with a Commission or Agreement State specific license authorizing distribution to persons specifically authorized by a Commission or Agreement State license to receive, possess and use the license.

e. (Same)

10. (Same)
11. (Same)
12.
    a. The primary Radiation Safety Officer (RSO) for this license is Joseph B.Hirst.
    b. Before assuming the duties and responsibilities as RSO or alternate RSO for this license, the individual(s) shall have successfully completed one of the training courses described in Criteria in Section 8.7.1 of NURGE-1556, Volume 4, dated October 1998.
    c. Before using licensed materials, Calumet Montana Refining personnel authorized will have successfully completed training on use, operation and calibration of all nuclear units, as described in Criteria in the section entitled "Authorized Users' in NUREG-1556, Vol. 4 dated October 1998 or equivalent.
13. (Same)
14. (Same)
15. (Same)
16. (Same)
17. The following services shall not be performed by the licensee: installation, initial radiation surveys (only if the surveys are performed by the RSO who received training pursuant to CFR 20.1501 or an Agreement State), and the survey meter will meet the Criteria in the section entitled 'Radiation Safety Program-Instruments' and that each survey meter will be calibrated by the manufacturer or other person authorized by the NRC or an Agreement State to perform survey meter.
18. The following services shall not be performed by the licensee: dismantling or opening the source head, beam alignment, and non-routine maintenance or repair of components related to the radiological safety of the gauge (i.e., the sealed source, the source holder source drive mechanism, on-off mechanism (shutter), shutter control, shielding). These services shall be performed only by persons specifically licensed by the U.S. Nuclear Regulatory Commission or an Agreement State to perform such services.
19. The licensee may relocate the device, remove from service, place into storage (only if a storage location has been approved by the U.S. Nuclear Regulatory Commission or an Agreement State), and the RSO or alternate RSO have been trained in the procedure and that all nuclear gauges remain safe and ensured that no fixed gauges can be lost, stolen or misplaced.
20. (Same)
21. (Same)

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22. (Same)
23. (Same)
24. (Same)
25. (Same)
26. (Same)
27. (Same)
28. (Same)

Yours Sincerely,

Joseph B. Hirst, RSO
Senior Safety Specialist
Calumet Montana Refining LLC
1900 10th ST NE
Great Falls, MT 59404
joseph.hirst@calumetspecialty.com
(406) 454-9848

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Radiation Safety Officer training course will include the following:

A. Basic radiation safety:
   1. Introduction to Radiation.
      a. What is radiation?
      b. Energy Units.
      c. Atomic Structure.
      d. Periodic Table
      e. Isotopes
      f. Radioactive & Radioactive Decay
      g. Activity
      h. Half Life
      i. Types of Ionizing Radiation
      j. Roentgen (R)
      k. Rad, rem
      l. Quality Factors
      m. ALARA
      n. Exposure Rate Calculation
      o. Dose rate at one foot from source
      p. Inverse Square Law
      q. Shielding Calculation
      r. Time, Distance & Shielding
      s. Half-Value Layer
      t. Radiation vs. Contamination
   2. Internal Exposure
      a. Cell Structure
      b. Acute vs. Chronic Exposure
      c. Effect vs. Dose for Acute Whole Body Radiation
   3. Natural Background Radiation
   4. Regulatory Jurisdiction
      a. NRC and Agreement States
   5. General vs. Specific Licenses
      a. 10CFR Part 31
      b. 10CFR 31.5
      c. General License Limitations
      d. Specific License & Requirements

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Reviewer: Joe Date: 1/5/14

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e. Compliance with 10CFR19
f. 10CFR20 Requirements
    1. Occupational Dose Limits
    2. Declared Pregnant Woman
    3. Members of the Public annual dose limits
g. Types of Postings

6. Inventory Requirements
7. Shutter Check
8. Leak Testing
9. Typical Source Head
    a. TN/KSI source heads
    b. Ronan source heads
    c. Berthold source heads
    d. Ohmart source heads
10. Radiation Surveys
11. Installation
12. Routine Maintenance & Non-Routine Maintenance
13. Transfer and Disposal
14. Records
15. Reporting
16. Applications and Emergency Actions
    a. What to tell emergency responders (Emergency Response Guide #164 (UN2974)
    b. Radiation Safety Officer
    c. NRC Regulatory Guides
        1. 8.13: Instruction Concerning Risks from Occupational Radiation Exposure.
17. Detection Theory
    a. Gas-Filled Tubes
        1. Ion Chambers
        2. Proportional Counters
        3. Geiger-Mueller Tubes
    b. Scintillators
    c. Semi-Conductors
18. Dosimetry
    a. Personnel Monitoring Requirements
    b. Types of Personnel Monitoring Devices
    c. Do's and Don'ts
19. Survey Meter Use
    a. Dose rate
    b. Dose

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c. Pre-Survey Inspection
d. Survey Types Radiation Survey Form
e. Radiation Survey Form

20. Hands on using survey meter & shutter checks & leak testing
    a. Leak Test Procedures
21. Transportation of Radioactive Material
    a. Agencies Involved
        1. International Civil Aviation Organization
        2. International Air Transport Association
        3. Nuclear Regulatory Commission
        4. Department of Transportation
        5. Agreement States
22. Shipping Radioactive Material
    a. A_1 and A_2 values
    b. Special & Normal Form
    c. Packaging Classifications
    d. Limited Quantity
    e. Type A Packaging
    f. Type B Packaging
    g. Markings
    h. Radioactive Labels
    i. Transport Index
    j. Placarding
    k. Shipping Papers
    l. Proper Shipping Names
    m. Proper Labeling on Over pack
    n. Shipping Detectors
23. Site-Specific Information
    a. Sealed Source and Device Registry 7 (SSDR)
    b. Individual Gauge Locations (maps)
    c. Customer's License
    d. Local Procedures
        1. Receipt/Disposal Controls
        2. Lockout/Tagout – Shutter Operation Authority
        3. Emergencies
        4. Postings

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5. Shielding or Barriers
6. Auditing

The training will be 16 hours with homework the first night, followed by a written test and then if time permits, hands on training on your nuclear source heads. An Excel program will be given to all students passing the test that have all the equations you will need if there was ever a problem and you had to do some of the calculations. A score of 75 on the test with a score of 80 on the homework passing.

The RSO training is approved by Washington, Oregon and the NRC.

Yours Sincerely,

Joseph B. Hirst, RSO
Senior Safety Specialist
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joseph.hirst@calumetspecialty.com
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