Conservation measures for operation of flare stacks

Fish and Wildlife Service
Louisiana Ecological Services Field Office

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Issue

Gas flaring occurs at liquefied natural gas (LNG) facilities, and other industrial plants and oil rigs, during plant start up and shutdown events as well as during unplanned pressure release events. The flame emitted to burn off flammable gas during a flaring event can attract birds especially at night. Nighttime attraction of lighting during inclement weather has proved to be a key liability for birds, and being that LNG facilities are located along the Gulf shoreline within the direct migratory path of Neotropical songbirds that threat could be even more pronounced. In September 2013, approximately 7,500, migrating songbirds were attracted to and killed by a flare at a LNG terminal in Saint John, New Brunswick, Canada. This event occurred during a foggy, low cloud cover, early fall evening along important migratory routes for songbirds. Incidents have occurred at flares on offshore oil and gas installations as well.

The following guidance has been developed to assist with the design and operation of gas flare structures to avoid and minimize impacts to migratory birds. Conservation recommendations provided are discretionary activities to minimize or avoid adverse effects of a proposed action on migratory birds. They should in no way impede any emergency actions.

Conservation Measures

1. To minimize the potential impacts to migrating birds during a flare event:
    a. avoid flaring at night,
    b. avoid flaring during low visibility (i.e., fog, storm event),
    c. avoid flaring during peak spring (mid-March through April) and fall (September and October) migrations depending on the location; and,
    d. lighting around the facility and on the flare stacks should follow FWS communication tower guidance, http://www.fws.gov/migratorybirds/pdf/management/usfwscommunicationtowerguidance.pdf

2. Mortality of birds perching on flare stacks results from direct incineration or by inhalation of the toxic gas if the flare igniter fails to work properly. Consideration should be given to installing anti-perching devices on flare stacks to prevent raptors and other birds from using them as perch sites. Open vent stack equipment, such as heater-treaters, separators, and dehydrator units, should be designed and constructed to prevent birds and bats from entering or nesting in or on such units, and to the extent practical, to discourage birds from perching on the stacks. Installing cone-shaped mesh covers on all open vents is one suggested method. Flat mesh covers are not expected to discourage perching and

are not acceptable. < http://www.fws.gov/mountain-prairie/contaminants/contaminants1f.html >

3. Consideration should be given to implementing an audible system (e.g. frightening device) that could also aid in deterring birds from the area during a flare event. Per the U.S. Department of Agriculture, Prevention and Control of Wildlife Damage (1994), useful frightening devices include broadcasted alarm and distress calls, pyrotechnics, exploders, and other miscellaneous auditory and visual frightening devices. No single technique can be depended upon to solve the problem. Numerous techniques must be integrated into a frightening program, and qualified knowledgeable personnel should be involved in the deterrent activities <http://icwdm.org/Handbook/birds/bird_e19.pdf>.

Migration Monitoring

Bird migration projections should be actively monitored, and maintenance activities (flaring events) should be planned to avoid peak migration periods and adverse weather conditions as much as possible. We recommend coordinating with U.S. Geological Survey (USGS), Radar Technology Program to develop a monitoring plan to determine peak migrations events in the area and how birds may be using the areas around the facility. Please contact, Wylie Barrow, Research Wildlife Biologist with USGS (barrow@usgs.gov, 337-266-8668).

Survey Plan

During all flaring events surveys similar to those conducted for communication towers should be conducted to determine if bird mortality has occurred. Please refer to the Briefing Paper on the Need for Research into the Cumulative Impacts of Communication Towers on Migratory Birds and Other Wildlife in the United States for examples of sampling methods. Survey plans should be reviewed by the Service prior to implementation, and survey results should be provided to the Service upon request.