

inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (e.g., materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standards bodies. The NTTAA directs EPA to provide Congress, through OMB, explanations when the Agency decides not to use available and applicable voluntary consensus standards.

This action does not involve technical standards. Therefore, EPA did not consider the use of any voluntary consensus standards.

List of Subjects in 40 CFR Part 271

Environmental protection, Administrative practice and procedure, Confidential business information, Hazardous waste, Hazardous waste transportation, Indian lands, Intergovernmental relations, Penalties, Reporting and recordkeeping requirements.

Authority: This action is issued under the authority of sections 2002(a), 3006 and 7004(b) of the Solid Waste Disposal Act as amended 42 U.S.C. 6912(a), 6926, 6974(b).

Dated: December 14, 2000.

David A. Ullrich,

Acting Regional Administrator, Region 5.
[FR Doc. 01-35 Filed 1-3-01; 8:45 am]

BILLING CODE 6560-50-P

FEDERAL COMMUNICATIONS COMMISSION

47 CFR Part 73

[MM Docket No. 91-137, RM-7494, FCC 00-409]

FM Broadcasting Services; Saltville, VA and Jefferson, NC.

AGENCY: Federal Communications Commission.

ACTION: Final rule.

SUMMARY: In MM Docket No. 91-137, the Commission denied an application for review filed by Smith Communications, licensee of Station WZJS(FM), Channel 264A, Banner Elk, North Carolina, of the Memorandum Opinion and Order, 61 FR 20,490, published May 7, 1996. The Commission denied review because it found no reason to depart from staff's reasoning set forth in the Memorandum Opinion and Order. It found that the staff had fully considered and rejected each of Smith's contentions that irregular terrain would prevent full signal coverage by the proposed upgraded Jefferson, North Carolina

station. Additionally, since the release of the Memorandum Opinion and Order, a construction permit had been granted for an actual transmitter site at a location different from the theoretical one used previously. The Commission reexamined the expanded coverage area from that site and found the coverage to be adequate and of similar size to that predicted using the theoretical site. With this action, the proceeding is terminated.

FOR FURTHER INFORMATION CONTACT: J. Bertron Withers, Jr., Mass Media Bureau, (202) 418-2180.

SUPPLEMENTAL INFORMATION: This is a summary of the Memorandum Opinion and Order, MM Docket 91-137, adopted November 17, 2000, and released November 28, 2000. The full text of this Commission decision is available for inspection and copying during normal business hours in the Commission's Reference Information Center (room CY-A257), 445 12th Street, SW., Washington, DC 20554. The complete text of this decision may be also purchased from the Commission's copy contractor, International Transcription Service, 1231 20th Street, NW., Washington, DC 20036, (202) 857-3800. Federal Communications Commission.

William F. Caton,
Deputy Secretary.

[FR Doc. 01-127 Filed 1-3-01; 8:45 am]

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DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 20

RIN 1018-AH64

Migratory Bird Hunting; Approval of Tungsten-Nickel-Iron Shot as Nontoxic for Hunting Waterfowl and Coots

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: We amend 50 CFR 20.21(j) to approve shot formulated of 50% tungsten, 35% nickel, and 15% iron as nontoxic for hunting waterfowl and coots. We assessed possible effects of the tungsten-nickel-iron (TNI) shot, and we believe that it is not a significant threat to wildlife or their habitats and that further testing of the shot is not necessary. In addition, approval of TNI shot may induce more waterfowl hunters to switch away from illegal use of lead shot, reducing lead risks to species and habitats.

DATES: This rule takes effect on January 4, 2001.

ADDRESSES: Copies of the Environmental Assessment are available from the Chief of the Division of Migratory Bird Management, U.S. Fish and Wildlife Service, 4401 North Fairfax Drive, Room 634, Arlington, Virginia 22203-1610.

FOR FURTHER INFORMATION CONTACT: Jon Andrew, Chief, or Dr. George T. Allen, Division of Migratory Bird Management, 703-358-1714.

SUPPLEMENTARY INFORMATION: The Migratory Bird Treaty Act of 1918 (Act) (16 U.S.C. 703-712 and 16 U.S.C. 742 a-j) implements migratory bird treaties between the United States and Great Britain for Canada (1916 and 1996 as amended), Mexico (1936 and 1972 as amended), Japan (1972 and 1974 as amended), and Russia (then the Soviet Union, 1978). These treaties protect certain migratory birds from take, except as permitted under the Act. The Act authorizes the Secretary of the Interior to regulate take of migratory birds in the United States. Under this authority, the Fish and Wildlife Service controls the hunting of migratory game birds through regulations in 50 CFR part 20.

Since the mid-1970s, we have sought to identify shot that does not pose a significant toxicity hazard to migratory birds or other wildlife. Compliance with the use of nontoxic shot has increased over the last few years (Anderson *et al.* 2000). We believe that it will continue to increase with the approval and availability of other nontoxic shot types. Currently, steel, bismuth-tin, tungsten-iron, tungsten-polymer, and tungsten-matrix shot are permanently approved as nontoxic. We have approved tin shot for the 2000-2001 hunting season (65 FR 76886). The purpose of this rule is to approve the use of TNI shot in the tested formulation (50% tungsten, 35% nickel, and 15% iron by weight) for waterfowl and coot hunting. On October 30, 2000 (65 FR 64650) we proposed to amend 50 CFR 20.21 (j), to include TNI shot on the list of approved nontoxic shot types.

On April 9, 1999 (64 FR 17308), we announced receipt of an application from Standard Resources Corporation (Standard) of Cherry Hill, New Jersey for nontoxic approval of HEVI-METAL shot in the 50% tungsten, 35% nickel, 15% iron formulation. The density of the shot in that formulation is 11.0 grams/cm³. The manufacturer believes that the shot does not need a coating because it is sufficiently noncorrosive under neutral pH. It is not chemically or physically altered by firing from a shotgun.

On April 19, 1999 (64 FR 19191), we announced that Standard's application did not provide sufficient information for us to conclude that the candidate shot is not a significant danger to migratory birds. We advised Standard to proceed with additional testing of the candidate shot. Subsequently, development of HEVI-METAL was transferred to ENVIRON-Metal, Inc., of Albany, Oregon (Environ-metal), and the shot was re-named HEVI-SHOT™.

On August 10, 2000, Environ-metal submitted an application for permanent approval of the tungsten-nickel-iron shot as nontoxic for hunting waterfowl and coots. The application included a description of the shot, results and a toxicological report of a preliminary 30-day dosing study of the toxicity of the shot in game-farm mallards (Ecological Planning and Toxicology, Inc. [EPT] 1999), and results of a more comprehensive 30-day acute toxicity study (Brewer and Fairbrother 2000).

Toxicity Information

Tungsten may be substituted for molybdenum in enzymes in mammals. Ingested tungsten salts reduce growth, and can cause diarrhea, coma, and death in mammals (*e.g.* Bursian *et al.* 1996, Cohen *et al.* 1973, Karantassis 1924, Kinard and Van de Erve 1941, National Research Council 1980, Pham-Huu-Chanh 1965), but elemental tungsten is virtually insoluble and therefore essentially nontoxic. In rats, a dietary concentration of 94 parts-per-million (ppm) did not reduce weight gain in growing rats (Wei *et al.* 1987). Lifetime exposure to 5 ppm tungsten as sodium tungstate in drinking water produced no discernible adverse effects in rats (Schroeder and Mitchener 1975). At 100 ppm tungsten as sodium tungstate in drinking water, rats had decreased enzyme activity after 21 days (Cohen *et al.* 1973). These studies indicate that tungsten salts are very toxic to mammals.

Chickens given a complete diet showed no adverse effects of 250 ppm sodium tungstate administered for 10 days in the diet. However, 500 ppm in the diet had detrimental effects on day-old chicks (Teekell and Watts 1959). Adult hens had reduced egg production and egg weight on a diet containing 1,000 ppm tungsten (Nell *et al.* 1981a). EPT (1999) concluded that 250 ppm in the diet would produce no observable adverse effects. Kelly *et al.* (1998) demonstrated no adverse effects on mallards dosed with tungsten-iron or tungsten-polymer shot according to nontoxic shot test protocols.

Most toxicity tests reviewed were based on soluble tungsten compounds

rather than elemental tungsten. As we found in our reviews of other tungsten shot types, we believe that there is no basis for concern about the toxicity of the tungsten in TNI shot to fish, mammals, or birds.

Nickel is a dietary requirement of mammals, with necessary consumption set at 50 to 80 parts per billion for the rat and chick (Nielsen and Sandstead 1974). Though it is necessary for some enzymes, nickel can compete with calcium, magnesium, and zinc for binding sites on many enzymes. Water-soluble nickel salts are poorly absorbed if ingested by rats (Nieboer *et al.* 1988). Nickel carbonate caused no treatment effects in rats fed 1,000 ppm for 3 to 4 months (Phatak and Patwardhan 1952). Rats fed 1,000 ppm nickel sulfate for 2 years showed reduced body and liver weights, an increase in the number of stillborn pups, and decrease in weanling weights through three generations (Ambrose *et al.* 1976). Nickel chloride was even more toxic; 1,000 ppm fed to young rats caused weight loss in 13 days (Schnegg and Kirchgessner 1976).

Soluble nickel salts can be classified as very toxic to mammals, with an oral LD₅₀ of 136 mg/kg in mice, and 350 mg/kg in rats (Fairchild *et al.* 1977). Nickel catalyst (finely divided nickel in vegetable oil) fed to young rats at 250 ppm for 16 months, however, produced no detrimental effects (Phatak and Patwardhan 1952).

In chicks from hatching to 4 weeks of age, 300 ppm nickel as nickel carbonate or nickel acetate in the diet produced no observed adverse effects. However, concentrations of 500 ppm or more reduced growth (Weber and Reid 1968). A diet containing 200 ppm nickel as nickel sulfate had no observed effects on mallard ducklings from 1 to 90 days of age. Diets of 800 ppm or more caused significant changes in physical condition of the ducklings (Cain and Pafford 1981). Eastin and O'Shea (1981) observed no apparent significant changes in pairs of breeding mallards fed diets containing up to 800 ppm nickel as nickel sulfate for 90 days.

Iron is an essential nutrient, so reported iron toxicosis in mammals is primarily a phenomenon of overdosing of livestock. Maximum recommended dietary levels of iron range from 500 ppm for sheep to 3,000 ppm for pigs (National Research Council [NRC] 1980). Chickens require at least 55 ppm iron in the diet (Morck and Austic 1981). Chickens fed 1,600 ppm iron in an adequate diet displayed no ill effects (McGhee *et al.* 1965). Turkey poult fed 440 ppm in the diet suffered no adverse effects. The tests in which eight #4 tungsten-iron shot were administered to

each mallard in a toxicity study indicated that the 45% iron content of the shot had no adverse effects on the test animals (Kelly *et al.* 1998).

Environmental Fate

Elemental tungsten and iron are virtually insoluble in water and do not weather and degrade in the environment. Tungsten is stable in acids and does not easily form compounds with other substances. Preferential uptake by plants in acidic soil suggests uptake of tungsten when it has formed compounds with other substances rather than when it is in its elemental form (Kabata-Pendias and Pendias 1984).

Nickel is common in fresh waters, though usually at concentrations of less than 1 part per billion in locations unaffected by human activities. Pure nickel is not soluble in water. Free nickel may be part of chemical reactions, such as sorption, precipitation, and complexation. Reactions of nickel with anions are unlikely. Complexation with organic agents is poorly understood (U.S. Environmental Protection Agency [EPA] 1980). Water hardness is the dominant factor governing nickel effects on biota (Stokes 1988).

Environmental Concentrations

Calculation of the estimated environmental concentration (EEC) of a candidate shot in a terrestrial ecosystem is based on 69,000 shot per hectare (Bellrose 1959, 50 CFR 20.134). Assuming complete dissolution of the shot, the EEC for tungsten in soil is 19.3 mg/kg. The EECs for nickel and iron would be 7.7 and 3.3 mg/kg, respectively. The EEC for nickel (the only one of the three elements with an application limit) is substantially below the U.S. Environmental Protection Agency (EPA) biosolid application limit. The 3.3 mg/kg EEC for nickel also is far below the 16 to 35 mg/kg concentrations suggested as minimum sediment concentrations at which effects of the metal are likely to occur (EPA 1997, Ingersoll *et al.* 1996, Long and Morgan 1991; MacDonald *et al.* 2000, Smith *et al.* 1996). The EEC for tungsten from TNI shot is below that for the already-approved tungsten-matrix shot. The EEC for iron is less than 0.01% of the typical background concentration, and the iron is in an insoluble form.

Calculation of the EEC in an aquatic ecosystem assumes complete erosion of the 69,000 shot/hectare in water 1 foot deep. The EECs for the elements in TNI shot in water are 2,348 µg/L for tungsten, 1,643 µg/L for nickel, and 704 µg/L for iron. We concluded that a tungsten concentration of 10,500 µg/L

posed no threat to aquatic biota (62 FR 4877). The EEC for nickel, if the shot were completely dissolved, would exceed the EPA acute water quality criterion of 1,400 µg/L in fresh water, and would greatly exceed the 75 µg/L criterion for salt water. However, tests showed that corrosion of TNI shot is negligible in neutral pH fresh water. Actual tests in water with a pH of 2 showed that the EEC for nickel would be 83.98 µg/L, and in salt water it would be 7.92 µg/L; both are far below the EPA criterion of 160 µg/L for chronic exposure.

Effects on Birds

Kraabel *et al.* (1996) surgically embedded tungsten-bismuth-tin shot in the pectoralis muscles of ducks to simulate wounding by gunfire and to test for toxic effects of the shot. The authors found that the shot neither produced toxic effects nor induced adverse systemic effects in the ducks during the 8-week period of their study.

Nell *et al.* (1981a) fed laying hens (*Gallus domesticus*) 0.4 or 1.0 g/kg tungsten in a commercial mash for five months to assess reproductive performance. Weekly egg production was normal, and hatchability of fertile eggs was not affected. Exposure of chickens to large doses of tungsten either through injection or by feeding resulted in an increased tissue concentration of tungsten and a decreased concentration of molybdenum (Nell *et al.* 1981b). The loss of tungsten from the liver occurred in an exponential manner, with a half-life of 27 hours. The alterations in molybdenum metabolism seemed to be associated with tungsten intake rather than molybdenum deficiency. Death due to tungsten occurred when tissue concentrations increased to 25 ppm in the liver. At that concentration, xanthine dehydrogenase activity was zero.

Toxicity Studies

Ringelman *et al.* (1993) conducted a 32-day acute toxicity study that involved dosing game-farm mallards with a shot alloy which was 39%, 44.5%, and 16.5% by weight, respectively. No dosed birds died during the trial, and behavior was normal. Post-euthanization examination of tissues revealed no toxicity or damage related to shot exposure. Blood calcium differences between dosed and undosed birds were judged to be unrelated to shot exposure. That study indicated that tungsten presented little hazard to waterfowl.

Initial analyses of corrosion of TNI shot in 0.1N HCl and in seawater

indicated that it is more corrosion resistant than copper-plated tungsten-iron shot and steel shot, and that it will release tungsten into the environment more slowly than does tungsten-iron shot. In addition, only a portion of the tungsten is soluble, and not all of that is absorbed. Therefore, EPT (1999) suggested that ingested TNI shot should pose minimal risks to migratory birds that might ingest it.

EPT conducted a preliminary 30-day oral toxicity study of TNI shot that followed the general approach outlined for a short-term acute toxicity test (50 CFR 20.134). Eight #4 TNI shot pellets were administered to each of three healthy adult male and three healthy adult female mallards by placing them in a gelatin capsule and placing the capsule in the bird's gizzard. All of the birds retained seven or eight of the pellets for the 30-day test period. During that time the birds behaved normally, and none of them exhibited signs of metal intoxication. Body weights of the birds did not change significantly during the test period.

Upon postmortem examination, all body organs looked normal. Histopathology showed that one of the females had a fatty liver, and also had elevated liver enzymes. Liver abnormalities due to fatty changes (accumulation of glycogen or fat) were considered the likely cause of the problem.

Brewer and Fairbrother (2000) reported on the outcome of more extensive corrosion/erosion testing of TNI shot, and steel and lead shot. Eight #4 TNI shot pellets were administered to each of 20 male mallards and 20 female mallards by placing the shot in a gelatin capsule and placing the capsule in the bird's gizzard. The same procedure was followed for dosing 20 male mallards and 20 female mallards with 8 #4 steel shot, and for dosing 5 males and 5 females with 8 #4 lead shot. The birds had been fasting prior to placement of the gelatin capsules to facilitate movement of the capsule to the gizzard. During the 30-day test period, the researchers monitored loss of shot through the digestive system, and they determined retention of shot in the gizzard upon necropsy. They also carefully monitored food consumption of the test birds and their health.

No mortality occurred in birds treated with TNI shot or steel shot. Nine of the ten birds dosed with lead died during the test period. Therefore, most measures of health and measures of shot erosion were not valid for the lead-dosed group. No significant differences in body weight changes emerged

between the steel shot group and the TNI shot group during the test period.

The evaluation focused on corrosion/erosion of the steel shot and the TNI shot, and associated changes in organs and blood chemistry. A total of 134 of the TNI shot pellets and 138 of the steel shot were recovered from the gizzards of the test birds after 30 days. TNI shot pellets recovered from gizzards at the end of the test retained an average of 88.6% of their initial weight; steel pellets retained an average of 49.7% of their weight.

Histopathological examination of kidney tissues from the 41 ducks alive at the end of the test period revealed no significant lesions. Livers also appeared to have been unaffected by steel pellets or TNI shot. Hemoglobin, white blood cell counts, hematocrits, and blood serum chemistry results did not differ between the steel shot test group and the TNI shot test group, with the exception that the mean for plasma protein was significantly higher in the TNI shot-treated ducks.

Analytical chemistry of liver, kidney, and blood samples showed some differences between the steel shot and TNI shot test groups. Mean tungsten concentrations in blood, liver, and kidney tissues were 0.24 ppm in the blood, 0.64 ppm in kidney tissue, and 1.65 ppm in liver tissue. No tungsten was detected in tissues of mallards dosed with steel shot. Mean nickel concentrations in blood (0.03 ppm), liver (0.09 ppm), and kidney (0.44 ppm) tissues were significantly higher in ducks dosed with TNI shot than in those dosed with steel shot. Mean nickel concentrations in blood, liver, and kidney tissues of mallards treated with 800 ppm in the diet for 90 days were 0.139, 0.52, and 1.94 ppm, respectively (Eastin and O'Shea 1991). Those ducks suffered no apparent ill effects from their treatment. Mean iron concentrations in the blood and liver were higher for the ducks dosed with steel shot, but kidney concentrations did not differ.

EPT (1999) calculated that the mallards studied by Eastin and O'Shea (1981) consumed approximately 102 mg of nickel each day during the study. Under the Tier 2 protocol, each test mallard is dosed with 8 #4 shot at 0, 30, 60, and 90 days, which in the case of TNI shot would contain a total of 32 shot, and 2.3 g of nickel per bird. At pH 2, with continual grinding of ingested shot, eight #4 pellets would lose 0.176 mg of nickel per day. The maximum exposure for a mallard under such conditions would be 0.704 mg/day, substantially less than the estimated consumption by mallards in the Eastin

and O'Shea study (EPT 1999). We believe, therefore, that consumption of nickel from TNI shot is unlikely to have detrimental effects on waterfowl.

Ingestion by Fish, Amphibians, Reptiles, or Mammals

Based on the available information and past reviews of tungsten-based shot, we expect no detrimental effects due to tungsten or iron on animals that might ingest TNI shot. However, we know of no studies of ingestion of nickel by herpetofauna. In the worst case, assuming complete erosion of a #4 TNI shot pellet equal to that found in a mallard gizzard, exposure to a vertebrate would be approximately 0.022 mg of nickel per day if the shot were retained in the animal. The exposure actually would be substantially less because a shot pellet likely would not be retained in most animals that might consume one.

Nontoxic Shot Approval

The first condition for nontoxic shot approval is toxicity testing. Based on the results of the toxicological reports and the toxicity tests, we conclude that TNI shot does not pose a significant danger to migratory birds, other wildlife, or their habitats.

The second condition for approval is testing for residual lead levels. Any shot with a lead level of 1% or more will be illegal. We determined that the maximum environmentally acceptable level of lead in shot is 1%, and incorporated this requirement in the nontoxic shot approval process we published on December 1, 1997 (62 FR 63607). ENVIRON-Metal, Inc. has documented that TNI shot meets this requirement.

The third condition for approval involves enforcement. On August 18, 1995 (60 FR 43313), we stated that approval of any nontoxic shot would be contingent upon the development and availability of a noninvasive field testing device. This requirement was incorporated in the nontoxic shot approval process. TNI shotshells can be drawn to a magnet as a simple field detection method.

This final rule will amend 50 CFR 20.21(j) by approving TNI shot as nontoxic for migratory bird hunting. It is based on the toxicological reports, acute toxicity studies, and assessment of the environmental effects of the shot. Those results indicate no deleterious effects of TNI shot to ecosystems or when ingested by waterfowl.

Public Comments

We received one comment on the October 30, 2000 proposed rule to

approve TNI shot for hunting waterfowl and coots. That comment supported granting approval for use of the shot.

References

- Anderson, W. L., S. P. Havera, and B. W. Zercher. 2000. Ingestion of lead and nontoxic shotgun pellets by ducks in the Mississippi flyway. *Journal of Wildlife Management* 64:848–857.
- Ambrose, P., P. S. Larson, J. F. Borzelleca, and G. R. Hennigar, Jr. 1976. Long term toxicologic assessment of nickel in rats and dogs. *Journal of Food Science and Technology* 13:181–187.
- Bellrose, F. C. 1959. Lead poisoning as a mortality factor in waterfowl populations. *Illinois Natural History Survey Bulletin* 27(3): 235–288.
- Brewer, L. and A. Fairbrother. 2000. Corrosion/erosion of Hevi-shot nontoxic shot in mallard duck gizzards. EBA, Inc., Snow Camp, North Carolina. 152 pages.
- Bursian, S. J., M. E. Kelly, R. J. Aulerich, D. C. Powell, and S. Fitzgerald. 1996. Thirty-day dosing test to assess the toxicity of tungsten-polymer shot in game-farm mallards. Report to Federal Cartridge Company. 71 pages.
- Cain, B. W. and E. A. Pafford. 1981. Effects of dietary nickel on survival and growth of mallard ducklings. *Archives of Environmental Contamination and Toxicology* 10:737–745.
- Cohen, H. J., R. T. Drew, J. L. Johnson, and K. V. Rajagopalan. 1973. Molecular basis of the biological function of molybdenum: the relationship between sulfite oxidase and the acute toxicity of bisulfate and SO₂. *Proceedings of the National Academy of Sciences* 70:3655–3659.
- Eastin, W. C., Jr. and T. J. O'Shea. 1981. Effects of dietary nickel on mallards. *Journal of Toxicology and Environmental Health* 7:883–892.
- Ecological Planning and Toxicology, Inc. 1999. Application for approval of t-n-i metal™ nontoxic shot: Tier 1 report. Cherry Hill, New Jersey. 28 pages plus appendixes.
- Fairchild, E. J., R. J. Lewis, and R. L. Tatken (editors). 1977. Registry of toxic effects of chemical substances, Volume II. Pages 590–592. U.S. Department of Health, Education, and Welfare Publication (NIOSH) 78–104B. 227 pages.
- Ingersoll, C. G., P. S. Haverland, E. L. Brunson, T. J. Canfield, F. J. Dwyer, C. E. Henke, N. E. Kemble, and D. R. Mount. 1996. Calculation and evaluation of sediment effect concentrations for the amphipod *Hyaella azteca* and the midge *Chironomus riparius*. EPA 905-R96–008, Great Lakes National Program Office, Region V, Chicago, Illinois. Mixed pagination.
- Kabata-Pendias, A. and H. Pendias. 1984. Trace elements in soils and plants. CRC Press, Inc. Boca Raton, FL. 315 pages.
- Karantassios, T. 1924. On the toxicity of compounds of tungsten and molybdenum. *Annals of Medicine* 28:1541–1543.
- Kelly, M. E., S. D. Fitzgerald, R. J. Aulerich, R. J. Balander, D. C. Powell, R. L. Stickle, W. Stevens, C. Cray, R. J. Tempelman, and S. J. Bursian. 1998. Acute effects of lead, steel, tungsten-iron and tungsten-polymer shot administered to game-farm mallards. *Journal of Wildlife Diseases* 34:673–687.
- Kinard, F. W. and J. Van de Erve. 1941. The toxicity of orally-ingested tungsten compounds in the rat. *Journal of Pharmacology and Experimental Therapeutics* 72:196–201.
- Kraabel, F. W., M. W. Miller, D. M. Getzy, and J. K. Ringelman. 1996. Effects of embedded tungsten-bismuth-tin shot and steel shot on mallards. *Journal of Wildlife Diseases* 38:1–8.
- Long, E. R. and L. G. Morgan. 1991. The potential for biological effects of sediment-sorbed contaminants tested in the National Status and Trends Program. NOAA Technical Memorandum NOS OMA 52, National Oceanic and Atmospheric Administration, Seattle, Washington. 175 pages + appendixes.
- MacDonald, D. D., C. G. Ingersoll, and T. A. Berger. 2000. Development and evaluation of consensus-based sediment quality guidelines for freshwater ecosystems. *Archives of Environmental Contamination and Toxicology* 39:20–31.
- McGhee, F., C. R. Creger, and J. R. Couch. 1965. Copper and iron toxicity. *Poultry Science* 44:310–312.
- Morck, T. A. and R. E. Austic. 1981. Iron requirements of white leghorn hens. *Poultry Science* 60:1497–1503.
- National Research Council. 1980. Mineral tolerance of domestic animals. National Research Council, National Academy of Sciences, Washington, D.C. 577 pages.
- Nell, J. A., W. L. Bryden, G. S. Heard, and D. Balnave. 1981a. Reproductive performance of laying hens fed tungsten. *Poultry Science* 60:257–258.
- Nell, J. A., E. F. Annonson, and D. Balnave. 1981. The influence of tungsten on the molybdenum status of poultry. *British Poultry Science* 21:193–202.
- Nieboer, E., R. T. Tom, and W. E. Sanford. 1988. Nickel metabolism in man and animals. Pages 91–122 in *Metal ions in biological systems*, volume 23: nickel and its role in biology. H. Sigel and A. Sigel, editors. Marcel Dekker, New York.
- Nielsen, F. H. and H. H. Sandstead. 1974. Are nickel, vanadium, silicon, fluoride, and tin essential for man? *American Journal of Clinical Nutrition* 27:515–520.
- Pham-Huu-Chanh. 1965. The comparative toxicity of sodium chromate, molybdate, tungstate, and metavanadate. *Archives Internationales de Pharmacodynamie et de Therapie* 154:243–249.
- Phatak, S. S. and V. N. Patwardhan. 1950. Toxicity of nickel. *Journal of Science and Industrial Research* 9B:70–76.
- Ringelman, J. K., M. W. Miller, and W. F. Andelt. 1993. Effects of ingested tungsten-bismuth-tin shot on captive mallards. *Journal of Wildlife Management* 57:725–732.
- Schnegg, S. and M. Kirchgessner. 1976. [Toxicity of dietary nickel]. *Landwirtschaftl. Forsch.* 29:177. Cited in *Chemical Abstracts* 86:101655y (1977).
- Schroeder, H. A. and M. Mitchener. 1975. Life-term studies in rats: effects of aluminum, barium, beryllium, and tungsten. *Journal of Nutrition* 105:421.

- Smith, S. L., D. D. MacDonald, K. A. Keenleyside, C. G. Ingersoll, and J. Field. 1996. A preliminary evaluation of sediment quality assessment values for freshwater ecosystems. *Journal of Great Lakes Research* 22:624–638.
- Stokes, P. 1988. Nickel in aquatic systems. Pages 31–46 in *Metal ions in biological systems*, volume 23: nickel and its role in biology. H. Sigel and A. Sigel, editors. Marcel Dekker, New York.
- Teekel, R. A. and A. B. Watts. 1959. Tungsten supplementation of breeder hens. *Poultry Science* 38:791–794.
- U.S. Environmental Protection Agency. 1980. Ambient water quality criteria for nickel. U.S. Environmental Protection Agency, Washington, D.C. 207 pages.
- U.S. Environmental Protection Agency. 1997. The incidence and severity of sediment contamination in surface waters of the United States: National sediment quality survey, Volume 1. EPA 823-R-97-006. Office of Science and Technology, Washington, D.C. 182 pages plus appendices.
- U.S. Fish and Wildlife Service. 1986a. Environmental Assessment: copper/nickel plating on nontoxic shot. U.S. Fish and Wildlife Service, Washington, D.C. 3 pages.
- U.S. Fish and Wildlife Service. 1986b. Finding of no significant impact: copper/nickel plating on nontoxic shot. U.S. Fish and Wildlife Service, Washington, D.C. 1 page.
- Weber, C. W. and B. L. Reid. 1968. Nickel toxicity in growing chicks. *Journal of Nutrition* 95:612–616.
- Wei, H. J., X-M. Luo, and X-P. Yand. 1987. Effects of molybdenum and tungsten on mammary carcinogenesis in Sprague-Dawley (SD) rats. *Chung Hua Chung Liu Tsa Chih* 9:204–7. English abstract.

Required Determinations

NEPA Consideration

In compliance with the requirements of section 102(2)(C) of the NEPA and the Council on Environmental Quality's regulation for implementing NEPA (40 CFR 1500), we prepared a final Environmental Assessment (EA) for approval of TNI shot in December 2000. The EA is available to the public at the location indicated in the **ADDRESSES** section. Based on review and evaluation of the information contained in the EA, we have determined that amending 50 CFR 20.21(j) to approve TNI shot as nontoxic for waterfowl and coot hunting would not be a major Federal action that would significantly affect the quality of the human environment within the meaning of section 102(2)(c) of the National Environmental Policy Act of 1969 (NEPA). Accordingly, the preparation of an Environmental Impact Statement on this action is not required.

Endangered Species Act Considerations

Section 7 of the Endangered Species Act (ESA) of 1972, as amended (16 U.S.C. 1531 *et seq.*), provides that

Federal agencies shall “insure that any action authorized, funded or carried out * * * is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of (critical) habitat * * *.” We completed a Section 7 consultation under the ESA for this rule, which is available to the public at the location indicated in the **ADDRESSES** section. The Division of Endangered Species concurred with our determination that this rule is “Not Likely to Affect” endangered or threatened species.

Regulatory Flexibility Act

The Regulatory Flexibility Act of 1980 (5 U.S.C. 601 *et seq.*) requires the preparation of flexibility analyses for rules that will have a significant effect on a substantial number of small entities, which includes small businesses, organizations, or governmental jurisdictions. This rule approves an additional type of nontoxic shot that may be sold and used to hunt migratory birds; this rule will add one shot type to those already approved. We have determined, however, that this rule will have no effect on small entities since the approved shot will supplement nontoxic shot already in commerce and available throughout the retail and wholesale distribution systems. We anticipate no dislocation or other local effects, with regard to hunters or others.

Executive Order 12866

This rule has not been reviewed by the Office of Management and Budget (OMB) review under Executive Order 12866. OMB makes the final determination of significance under Executive Order 12866.

Paperwork Reduction Act

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. We have examined this regulation under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501) and found it to contain no information collection requirements. We have received OMB approval of continued collection of information from shot manufacturers for the nontoxic shot approval process. For further information see 50 CFR 20.134.

Unfunded Mandates Reform

We have determined and certify pursuant to the Unfunded Mandates Reform Act, 2 U.S.C. 1502, *et seq.*, that this rulemaking will not impose a cost of \$100 million or more in any given

year on local or State government or private entities.

Small Business Regulatory Enforcement Fairness Act

This rule is not a major rule under 5 U.S.C. 804(2), the Small Business Regulatory Enforcement Fairness Act. It does not have an annual effect on the economy of \$100 million or more; nor will it cause a major increase in costs or prices for consumers, individual industries, Federal, State, or local government agencies, or geographic regions. This rule has the potential for reducing the present cost of nontoxic shot by making additional materials available for consumers. It does not have significant adverse effects on competition, employment, investment, productivity, innovation, or the ability of U.S.-based enterprises to compete with foreign-based enterprises. This rule may provide beneficial effects to competition, employment, investment, productivity, innovation, and the ability of U.S.-based enterprises to compete with foreign-based enterprises.

Civil Justice Reform—Executive Order 12988

We, in promulgating this rule, have determined that these regulations meet the applicable standards provided in Sections 3(a) and 3(b)(2) of Executive Order 12988.

Takings Implication Assessment

In accordance with Executive Order 12630, this rule, authorized by the Migratory Bird Treaty Act, does not have significant takings implications and does not affect any constitutionally protected property rights. This rule will not result in the physical occupancy of property, the physical invasion of property, or the regulatory taking of any property. In fact, this rule will allow hunters to exercise privileges that would be otherwise unavailable; and, therefore, reduces restrictions on the use of private and public property.

Federalism Effects

Due to the migratory nature of certain species of birds, the Federal Government has been given responsibility over these species by the Migratory Bird Treaty Act. This rule does not have a substantial direct effect on fiscal capacity, change the roles or responsibilities of Federal or State governments, or intrude on State policy or administration. Therefore, in accordance with Executive Order 13132, this regulation does not have significant federalism effects and does not have sufficient federalism implications to

warrant the preparation of a Federalism Assessment.

Government-to-Government Relationship With Tribes

In accordance with the President's memorandum of April 29, 1994, "Government-to-Government Relations with Native American Tribal Governments" (59 FR 22951) and 512 DM 2, we have determined that this rule has no effects on Federally recognized Indian tribes.

Effective Date

Under the APA (5 U.S.C. 551-553) our normal practice is to publish policies with a 30-day delay in effective date. In this case, however, we use the "good cause" exemption under 5 U.S.C. 553(d)(3) to make this rule effective upon publication. This rule relieves a restriction, and it is not in the public interest to delay its effective date. We believe that another nontoxic shot option likely will improve hunter compliance, thereby reducing the amount of lead shot in the environment.

List of Subjects in 50 CFR Part 20

Exports, Hunting, Imports, Reporting and recordkeeping requirements, Transportation, Wildlife.

For the reasons discussed in the preamble, we propose to amend part 20, subchapter B, chapter 1 of Title 50 of the Code of Federal Regulations as follows:

PART 20—[AMENDED]

1. The authority citation for part 20 continues to read as follows:

Authority: 16 U.S.C. 703-712 and 16 U.S.C. 742 a-j.

2. Section 20.21 is amended by revising paragraph (j) to read as follows:

§ 20.21 What hunting methods are illegal?

* * * * *

(j) While possessing shot (either in shotshells or as loose shot or muzzleloading) other than steel shot, or bismuth-tin (97 parts bismuth: 3 parts tin with <1 percent residual lead) shot, or tungsten-iron (40 parts tungsten: 60 parts iron with <1 percent residual lead) shot, or tungsten-polymer (95.5 parts tungsten: 4.5 parts Nylon 6 or 11 with <1 percent residual lead) shot, or tungsten-matrix (95.9 parts tungsten: 4.1 parts polymer with <1 percent residual lead) shot, or tin (99.9 percent tin with <1 percent residual lead) shot, or tungsten-nickel-iron (50% tungsten: 35% nickel: 15% iron with <1 percent residual lead), or such shot approved as nontoxic by the Director pursuant to procedures set forth in Sec. 20.134,

provided that this restriction applies only to the taking of Anatidae (ducks, geese, (including brant) and swans), coots (*Fulica americana*) and any species that make up aggregate bag limits during concurrent seasons with the former in areas described in Sec. 20.108 as nontoxic shot zones, and further provided that:

(1) Tin shot (99.9 percent tin with 1 percent residual lead) is legal as nontoxic shot for waterfowl and coot hunting for the 2000-2001 hunting season only.

(2) [Reserved]

Dated: December 27, 2000.

Kenneth L. Smith,

Assistant Secretary for Fish and Wildlife and Parks.

[FR Doc. 01-139 Filed 1-3-01; 8:45 am]

BILLING CODE 4310-55-P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 679

[I.D. 091900B]

RIN 0648-A027

Fisheries of the Exclusive Economic Zone Off Alaska; Rebuilding Overfished Fisheries

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Approval of a fishery management plan amendment.

SUMMARY: NMFS announces the approval of Amendment 14 to the Fishery Management Plan for the Bering Sea/Aleutian Islands King and Tanner Crabs (FMP). This amendment contains a rebuilding plan for the overfished stock of Bering Sea snow crab. This action is necessary to ensure that conservation and management measures continue to be based upon the best scientific information available. It is intended to enhance the Council's ability to achieve, on a continuing basis, optimum yield from fisheries under its authority.

DATES: The amendment was approved on December 28, 2000.

ADDRESSES: Copies of Amendment 14 to the FMP and the Environmental Assessment (EA) prepared for the amendment are available from the Sustainable Fisheries Division, Alaska Region, NMFS, P.O. Box 21668, Juneau, AK 99802-1668, Attn: Lori Gravel.

FOR FURTHER INFORMATION CONTACT: Gretchen Harrington, 907-586-7228 or gretchen.harrington@noaa.gov.

SUPPLEMENTARY INFORMATION: NMFS declared the Bering Sea stock of snow crab (*Chionoecetes opilio*) overfished on September 24, 1999, because the spawning stock biomass was below the minimum stock size threshold defined in the FMP. On September 24, 1999, NMFS notified the Council that the stock was overfished (64 FR 54791, October 8, 1999). The Council then took action to develop a rebuilding plan within 1 year of notification as required by section 304(e)(3) of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act).

In June 2000, the Council adopted Amendment 14, the rebuilding plan to accomplish the purposes outlined in the national standard guidelines to rebuild the overfished stock. Amendment 14 specifies a time period for rebuilding the stock that satisfies the requirements of the Magnuson-Stevens Act. Under the rebuilding plan, the Bering Sea snow crab stock is estimated to rebuild, with a 50 percent probability, within 10 years. The stock will be considered "rebuilt" when it attains the maximum sustainable yield stock size level for 2 consecutive years.

The rebuilding plan consists of a framework that references the State of Alaska's harvest strategy, bycatch control measures, and habitat protection measures. The plan uses the harvest strategy developed by the Alaska Department of Fish and Game. The harvest strategy was reviewed and adopted by the Alaska Board of Fisheries. The FMP defers development of harvest strategies to the State of Alaska, with oversight by NMFS and the Council. The rebuilding harvest strategy should result in more spawning biomass because more large male crab would be conserved and fewer juveniles and females would die due to incidental catch and discard mortality. More spawning biomass would be expected to produce larger year-classes when environmental conditions are favorable. Protection of habitat and reduction of bycatch may reduce mortality of juvenile crabs, thus allowing a higher percentage of each year-class to contribute to spawning and future landings.

The Council prepared an EA for Amendment 14 that describes the management background, the purpose and need for action, the management alternatives, and the environmental and the socio-economic impacts of the