ALASKA LEGISLATURE COMMITTEE FILES, 1989-1990 8672
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therefcre, within the scope of the ionizing radiation regulation.4/

Several other FDA standards of identity similarly provide for the optional use of "pieces" of "vegetables" or "seasonings" up to 10% - 15%. These vegetable seasoning ingredients are authorized to be identified on the label as "seasoned with...." See e.g.s, 21 C.F.R. §§ 155.130(a)(3)(xii)(b), (a)(4)(canned corn); 155.170(a)(2)(xiii)(a), (a)(3)(ii)(b)(canned peas); and 155.190(a)(2)(vi-vii), (a)(5)(ii)(b)(canned tomatoes). These regulatory provisions make clear that bits or pieces of dried vegetables are commonly understood to be "seasonings".5/

Finally, FDA confirmation that dried mushroom bits are permissibly treated with ionizing radiation would be consistent with the general rationale underlying radiation treatment of spices and seasonings. The preamble to the proposed rule indicates that use of radiation with dried spices and dried vegetable seasonings raises less concern than use with fresh fruits, vegetables, and other foods because the quantity of radiolytic products produced by radiation directly relates to the amount of water contained in the food. 49 Fed. Reg. at 5716. Because the mushroom bits Golden Grain incorporates into its products are dried, like spices, they raise few, if any, concerns. Moreover, like any vegetable seasoning, dehydrated mushroom bits, present at between 1-2.2%, raise few, if any, concerns because of the relatively small quantity used.

We believe the dried mushroom bits previously used in Golden Grain's two products warrant the same regulatory treatment as spices and other vegetable seasonings. If appropriate, we would be pleased to meet with you to discuss this matter. Moreover, we think FDA confirmation of our belief important because both the food industry and public interest groups are vitally interested in FDA's willingness to defend

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4/ Under USDA regulations, the use of very small amounts of meat or poultry to season or flavor soup or similar products subjects the product to a "flavored with" or "seasoned with" labeling requirement. See 9 C.F.R. § 381.15(e).

5/ Similarly, a report of the Codex Alimentarius Commission indicates that in the U.S. certain dehydrated vegetables such as celery, bell peppers, onion and garlic are considered spices. See Attachment C.

the expanded scope of its regulation and support the use of radiation technology. We greatly appreciate your cooperation and assistance in quickly resolving this important issue.

Sincerely,

Richard L. Frank
David F. Weeda
Counsel to the Golden Grain Company

RLF:sdd

GOLDEN GRAIN

December 28, 1987

M. Schramm - Chicago (Law Department)

cc: V. Sval
J. Van Atta
RMS

MUSHROOMS IN GOLDEN GRAIN PRODUCTS

The principal reason for creating side dish products is to provide the consumer options and variety. A highly desirable flavor combination with rice and noodles is the blend of meat flavor (chicken or beef) with the earthy flavor of mushrooms. Mushrooms are commonly used as a flavor adjunct in a wide variety of food recipes. Specifically in RAR Chicken and Mushrooms and NR Chicken and Mushrooms, the flavor of the added mushrooms provides a unique flavor combination that is found to be highly accepted and desired by consumers of these type products. The mushrooms are added to provide a unique flavoring/seasoning to the rice/pasta or noodle side dish products. The mushroom seasoning flavor added is designed so that the flavor combination of the chicken and mushroom seasoning is a unique and balanced blend that appeals to a wide range of consumers.

As a professional food/flavor technologist, I consider the addition of mushroom flavor/seasoning to be a principal tool available to me for creation of products that appeal to our segment of the consuming public. I use mushrooms, whether whole, sliced, kibbled, or powdered, as a source of seasoning flavor that modifies other base flavors, i.e., rice, noodles, meat seasoning, etc. In my opinion they are no different than the addition of salt, onions, or spices in the actual practice of providing products with flavor variety. There is no other way to provide consumers this type of desired flavor sensation, and I consider it a major tool in the formulation of new, unique products for the consumer.

I would be happy to discuss further at your convenience.

M. G. Heydanek
Assoc. Director
Golden Grain R&D

MGH/scu

codex alimentarius commission

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

WORLD HEALTH ORGANIZATION

JOINT OFFICE: Via delle Terme di Caracalla 00100 ROMA Tel. 5797 Telex 62451 FAO I Cable Foodagri

Agenda Item 8

CX/PM 68/8
August 1968

JOINT FAO/WHO FOOD STANDARDS PROGRAMME
CODEX COMMITTEE ON FOOD HYGIENE
Twenty-First Session
Washington, D.C., 11-17 September 1968

SPICES AND HERBS*

Part I - Production Processing and Microbiology

INTRODUCTION

Spices are any of various aromatic vegetable (plant) products used primarily to season, flavor, or to impart an aroma or color to foods and beverages. Condiments are spices alone, or blends of spices which have been formulated with other flavor potentiators to enhance the flavor of foods. The International Organization for Standardization (ISO) has adopted "Spices and Condiments" as its official nomenclature. ISO has defined more than seventy spices and herbs (15). In the U.S. spice trade certain dehydrated vegetables (celery, garlic, onion, bell peppers) as well as some additional seeds (poppy, sesame) are included as spices. The characteristics and nomenclature of all recognized spices and condiments has been reviewed by PRUTHI (30), (31). Definitions and specifications for imported and domestic raw and processed spices can be found in various government publications (26), (22), (32), (36) and trade association documents (1).

*Prepared by Mr. W.A. Spitler (U.S.A.)

...MENT OF HEALTH & HUMAN SERVICES

Public Health Service

Food and Drug Administration
Washington DC 20204

AUG - 6 1987

Bruce Meyer
Vice President
Radiation Sterilizers, Inc.
3000 Sand Hill Road
Bldg 84-245
Menlo Park, CA 94025

Dear Mr. Meyer:

This is in response to your June 24th letter asking whether dried strawberry seeds can be considered as a dry or dehydrated aromatic vegetable substance under 21 CFR 179.26(b) and irradiated for microbial disinfection at doses not to exceed 30 kGy..

In developing its regulation, FDA used the term "aromatic vegetable substances" to describe substances that are used for their aroma and flavoring properties. This is different from substances used for texture modification and mouth-feel. (See enclosed definitions of technical effects of food ingredients, §170.3(o).) You state that the strawberry seeds are separated from the berries and dehydrated for later use as an ingredient in the preparation of various strawberry flavored desserts or snacks.

We do not believe that dried strawberry seeds can be considered an aromatic vegetable substance because we have no information to indicate that strawberry seeds are used as a strawberry flavoring substance. The strawberry seeds appear to be added to modify the texture and mouth-feel of the food. Thus, dried strawberry seeds may not be irradiated for microbial disinfection at doses not to exceed 30 kGy under the current regulation.

We believe the regulation would have to be amended to cover the use you propose.

Sincerely yours,

Clyde A. Takahashi, Ph.D.
Division of Food and Color Additives
Center for Food Safety
and Applied Nutrition

Enclosure

FOOD and WATER, INC.
3 Whitman Drive • Denville, NJ 07834 • (201) 625-2768 / 584-4947

FOOD IRRADIATION: A SUMMARY

Prepared by:

Food and Water, Inc.

September 15, 1987

Dr. Walter Burnstein, Chairman

Dr. Judith Johnsrud, Research Director

Contact Person:
Mordecai Weintraub, Administrative Director
718-783-2146

ATTACHMENT # 13

PROBLEM STATEMENT

Food irradiation, approved in 1986 by the FDA, is a process which will potentially allow for the exposure of much of our national food supply to recycled radioactive materials derived from radioactive waste.* Proponents maintain that the safety of the process has been documented. They claim the benefits offered by food irradiation are extension of food shelf life, destruction of insect pests, control of bacterial growth or actual sterilization of foods at very high radiation doses, and control of the ripening time of some crops.[1] They also claim it will increase profits for farmers and help to solve the problem of world hunger.

Critics counter these claims with evidence that food irradiation warrants caution. They raise five major areas of concern: human health and safety hazards, environmental and transportation hazards, food irradiation's potential role in weapons fabrication, its potential significance as a partial "solution" to the high-level radioactive waste disposal problem, and questions about the safety of the process in light of existing safe alternatives.

Human Health and Safety Hazards

Despite proponents' claims of safety, experts[2] note that there are significant uncertainties and potentially severe health hazards associated with food irradiation, including, though not limited to, the following:[3]

1. The destruction or chemical modification of essential vitamins and minerals such as vitamins C, E, and K, amino acids (such as methionine), fats and carbohydrates; [4]

2. The formation of organic free radicals** which may react with molecular oxygen to produce peroxides, ketones, aldehydes and epoxides, which, after ingestion, can react with cellular DNA to cause mutations and cancer;[5]

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* In this process, food is introduced into an irradiation chamber on a conveyor belt and exposed to gamma radiation from cobalt-60, cesium-137 or an electron beam from machine generated sources. The length and dose of exposure varies depending on the food being irradiated and the purpose of the irradiation. The food then exits the chamber and may later be sold for public consumption.

** Free Radicals are molecular fragments in which some of the valence electrons remain free, i.e. they do not partake in bonding. In other words, they are short-lived unstable fragments of stable molecules to which extra electrons are attached. They are produced by molecular exposure to radiation or by chemical reaction. Free radicals are very efficient in destroying cell membranes and attacking DNA. They can be formed from many different molecules but one of the most important is O2- which is known as Super Oxide. This toxic form of oxygen is recognized as playing a crucial role in most lethal human diseases e.g. cancer, heart attack, stroke and emphysema. Super Oxide has an impact on virtually every form of human disease as a result of indirect chemical damage to the human cell.

3. Creation of an environment where toxic radiation-resistant organisms are freed from competition with less resistant ones and can multiply unchallenged; (Example: radiation doses required to kill botulin-producing bacteria are higher than those which kill off the bacteria that cause salmonella and those which, by bad taste or smell, indicate food spoilage. Food thus exposed to "insufficient" radiation will kill off the latter but leave dangerous pathogens to thrive without detectable signs of spoilage.)[6]

4. The stimulation and rapid division of fungi which create aflatoxins (naturally occurring potent carcinogens) that may grow as much as 50 times more rapidly on foods that have been irradiated;[7]

5. The creation of chemicals called radiolytic products, many of which are unique to the specific food being irradiated, appearing nowhere else in nature and having never been consumed by humans; their potential health impacts are unknown and untested;[8]

6. Chromosomal abnormalities which have been linked to leukemia;[9]

7. Induction of testicular tumors;[10]

8. Kidney damage, possibly auto-immune in nature, called glomerulonephropathy, which is chronic and can result in death;[11]

9. Increased death rate in offspring of animals fed irradiated food;[12]

10. Increased abnormal white blood cell count which indicates that chromosomal damage may be developing.[13]

As this list indicates, food irradiation poses numerous potential hazards to the consumer. The government, however, has not demanded scientific validation of the safety of food irradiation as a precondition for its approval. The FDA states that "Studies of sufficiently high quality to support the safety of irradiated food...are...not available.* Normally, FDA regulations require that the safety of any additive or preservative be demonstrated prior to its use in our food. Food irradiation was approved on the basis of theoretical calculations, with the FDA assuming that the potential hazards are insufficient to be regarded as genuine health threats. The final FDA task group report on the issue stated that irradiated food "...should be exempt from any toxicological testing requirements."** Experts who have reviewed these studies, however, come to a strikingly different conclusion. Dr. Donald Louria, Chairman of the Department of Preventive Medicine and Community Health at the University of Medicine and Dentistry of New Jersey, conducted a careful review of the studies accepted by the FDA and concluded as follows: "Taken together, these studies could not possibly

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* U.S. Department of Health and Human Services, Public Health Service, Food Additives Evaluation Branch, "Final Report of Task Group for the Review of Toxicology Data on Irradiated Foods", April 9, 1982. (See Appendix A.)

**Ibid.

establish the safety of food irradiation. Indeed, two of the studies suggest the technology is not safe."*

The fact that unanswered safety questions do in fact exist is amply demonstrated by the following scandal which occurred in England during the summer of 1986.

> A shipment of prawns arrived in England from the Far East. Food inspectors refused the shipment due to an excessively high bacterial count. Normally, such a shipment is destroyed. In this instance, the prawns were re-shipped to the Netherlands where they were irradiated. The irradiation was successful in killing the bacteria. Unfortunately, the irradiation left intact the toxins previously released by the bacteria while eliminating the visual and olfactory evidence customarily used by consumers to determine whether spoilage has begun. The tainted prawns were then returned to England. They were sold to consumers without warning of their potential for causing food poisoning.[14]

Environmental and Transportation Hazards

Experts[15] also suggest that food irradiation technology presents major environmental considerations similar to those posed by other nuclear processes but in some respects more severe because of the large number of activities involved, the high-level radioactive sources at each facility, and the lesser degree of regulatory control required. These include:

1. Increased transport and handling of high-level radioactive wastes on America's highways presenting numerous communities with the possibility of contamination in the event of an accident;

2. Increased sources of worker exposure to radioactive materials resulting in higher carcinogenic and/or mutagenic risk; (In 1977, an employee at a Radiation Technology, Inc. facility opened the door to the radiation chamber while the radiation source was exposed, receiving a dose of 222 rads, a significant sub-lethal dose.[16] An irradiation industry worker in Norway received a lethal exposure in a comparable accident.)

3. Potential for the accidental contamination of the immediate environment or of groundwater supplies; (There have been two known instances, one in 1976 at an Isomedix plant in Parsippany, N.J. and the other in 1982 at an International Nutronics plant in Dover, N.J., where radioactive water was poured into the local sewage system.)[17]

4. Possibility for the creation of potentially dangerous radiation-resistant mutant bacteria and viruses and their subsequent release into the environment; (In the book called Preservation of Food by Ionizing Radiation, Nicholas Grecz, Durwood Rowley and Akira Matsuyama

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* Testimony of Donald B. Louria, M.D. before the New Jersey State Assembly Health and Human Services Committee, June 15, 1987.

state that mutant salmonella bacteria have already developed in laboratories because of repeated irradiation.)[18]

5. Continued generation of radioactive wastes for which a secure isolation technology has yet to be developed;

6. Increased opportunity for major terrorist threat; (A terrorist can place a time bomb in a crate of food which will pass through the irradiation chamber. An explosion could breach the irradiation chamber allowing radioactive material to be scattered in the surrounding community.)[19]

7. Accidental explosions which could breach the irradiation chamber and release radioactive material. (Accidental explosions, fires or loss of protective water from the radioactive source material storage pool do occur and cannot be precluded. An unscheduled Nuclear Regulatory Commission [NRC] inspection on July 23 and 24, 1987 at a Precision Materials Co. irradiation facility uncovered "either a leak or 'serious evaporation' of water" in the storage pool in which cobalt-60 was stored.)[20]

No region of the country is immune to, or exempt from, the impacts of this technology and its products. Government plans call for the distribution of irradiated food nationwide, even worldwide. Under the Byproducts Utilization Program, the DOE is demonstrating mobile food irradiation facilities which would be used for freshly harvested produce in agricultural production areas. At the same time, large centralized facilities are proposed for operation in wholesale distribution centers within major metropolitan areas, as exemplified by the Port Authority proposal for Elizabeth, N.J., (now cancelled in response to information provided by Food and Water which resulted in heavy public opposition) and the more recent proposal of an international consortium, called Agrolife, S.A., to operate a facility in the port of Philadelphia.

Jacek S. Sivinski, Director of Radiation Technology Programs for CH2M Hill (a consultant firm to the DOE on the Byproducts Utilization Program), has stated that government plans call for the construction of up to one thousand food irradiation facilities across the country, in both urban and rural areas, each utilizing as much as one million to ten million curies* of radioactive materials.[21] By contrast, hospital medical irradiation facilities generally use no more than 1,000 curies of cobalt-60. Serious accidents have indirectly resulted from the mishandling of even those comparatively small quantities of radioactive materials.[22] Not only is the amount projected for use in just a few irradiation facilities more than the total amount of radioactive material currently in use in all hospital irradiation facilities throughout the country but, in the case of cesium-137, the radioactive material most likely to be used in the majority of food irradiation facilities, the amount to be used in a single irradiation facility represents 1,000 times the amount of cesium-137 released by a 20-kiloton nuclear bomb. It is within the range of the amount of cesium-137 estimated to have been released by the explosion of the Chern-

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* A curie is a measure of radioactivity given off by an unstable element. One curie equals the amount of radioactivity associated with one gram of radium.

byl reactor.[23] Cesium-137 is among the most biologically hazardous of radioisotopes. A major accident at any one of these facilities could, therefore, result in significant long-lasting environmental contamination over a large area. This fact notwithstanding, the NRC is not requiring the filing of environmental impact statements on any aspect of this process.

Not least among the environmental hazards, some observers suggest, is that, with the creation of new companies as this multi-billion dollar "growth industry" gets under way, the likelihood is markedly increased that unscrupulous entrepreneurs will illegally and unsafely dispose of their radioactive wastes. "Midnight dumping" of hazardous wastes is well documented. Citizens familiar with the issue point out that some of the companies which will operate these facilities have already demonstrated a notable lack of concern about protecting the environment. For example, Radiation Technology, Inc. (RTI) of Rockaway, N.J., is licensed to carry out this technology but has an established record for flagrant violations of federal and state standards of environmental protection. This company has been cited by the Environmental Protection Agency (EPA) for illegal activities such as mixing radioactive waste with regular garbage.[24] Officials of another irradiation company, International Nutronics, Inc. of Dover, N.J., have also been indicted and convicted of illegal activities associated with a 1982 radioactive spill in which workers dumped radioactive water down a bathroom drain.[25] The company has since filed for bankruptcy. Precision Materials, Inc. of Mine Hill, N.J. was ordered by the NRC to close its facilities as a result of irregularities discovered during an NRC inspection. Future recurrence of safety violations or the deliberate radioactive contamination of the environment, as has happened at RTI and International Nutronics, is certainly possible, even likely.

DOE Sponsorship and Food Irradiation's Link to Nuclear Weapons Production and Nuclear Waste Disposal Programs

The U.S. Department of Energy (DOE) appears to be the prime government sponsor of food irradiation with an active Byproducts Utilization Program, the stated purpose of which is to demonstrate the efficacy of the process and to promote the use of a radioactive waste, cesium-137, as the irradiating source material.[26] DOE has reached agreement with several states (Iowa, Oklahoma, Florida, Alaska, Hawaii, Washington) to build demonstration irradiators for fresh produce. These irradiators will use cesium-137 obtained from the reprocessing of fuels from DOE plutonium production reactors. (This cesium is currently in storage at Hanford, Washington.)

A thriving food irradiation industry would benefit the nuclear arms program, which the DOE oversees, by increasing the stockpile of plutonium which will be needed to carry out the Strategic Defense Initiative (Star Wars) and other nuclear weapons production programs.[27] If approximately 1,000 irradiation facilities are constructed, they would require at least one billion curies of radioactive isotope to operate. The isotope currently used in the irradiation process is cobalt-60 but only 10-20 million curies of cobalt-60 are produced per year. Worldwide cobalt-60 production capacity would not come close to meeting the isotope demand created by a flourishing food irradiation industry. The only radioactive isotope available in sufficient quantity to meet the potential demand of a food irradiation industry is

cesium-137. The DOE currently has on hand between 150-200 million curies of cesium-137, an amount which still leaves a shortage of some 800 million curies of radioactive isotope. According to Dr. Garth L. Tingey, Senior Research Scientist at Battelle Pacific Northwest Laboratories, the only possible source for this quantity of cesium-137 is spent nuclear reactor fuel, i.e. the high-level radioactive waste from commercial and military nuclear reactors from which could be obtained one to two billion curies of Cesium-137.[28]

Recovering cesium-137 from reactor fuel requires reprocessing of the fuel. Chemical reprocessing is a complex and highly dangerous process (considered the most environmentally hazardous step in the entire nuclear fuel cycle*) in which spent fuel is chemically treated for the purpose of separating and retrieving radioactive isotopes contained in the waste. This technology was halted in the late 1970's by Presidential order due to costs, environmental hazards, and, in particular, public concerns about the construction and proliferation of nuclear weapons utilizing the plutonium recovered from reprocessing of commercial waste. If reprocessing is begun anew, it is likely that the Barnwell reprocessing plant, already constructed for this purpose, will be reactivated, that reprocessing facilities at either the Hanford or Savannah River nuclear weapons plants will be modified, that a new reprocessing plant will be utilized, or all the above. Modifications of the Hanford and Savannah River facilities are indeed in the planning stages."[29] DOE officials have, furthermore, stated to Congressional committees this year that DOE has no objection to the private sector's reinitiation of chemical reprocessing of commercial spent fuel. The head of DOE's Office of Civilian Radioactive Waste Management, Benard Ruche, has stated that the major public benefit to be derived from reprocessing would be the recovery from spent fuel of cesium-137 for food irradiation.

Beyond the recovery of cesium-137, there is another benefit to be derived from reprocessing which is undoubtedly of interest to the DOE. Plutonium, in increasingly short supply for the military, would also be recovered if spent fuel were reprocessed.[30] Under current law, reprocessing for the explicit purpose of utilizing plutonium recovered from commercial spent fuel for nuclear weapons is forbidden by the Mitchell-Simpson-Hart Amendment to the Atomic Energy Act. It would also be contrary to strong public sentiment against the linking of military and civilian nuclear programs. However, recovering plutonium as a consequence of reprocessing for a publicly beneficial purpose, namely byproducts utilization for the purpose of food irradiation, is not banned and would create a benign, even altruistic link between the military and civilian programs. Plutonium so recovered could then be stored for future use even if it could not be used immediately because of the stipulations of the Mitchell-Simpson-Hart Amendment.[31]

If reprocessed, commercial spent fuel can yield a supply of some 75 metric tons of plutonium-239, enough plutonium to arm at least 20,000 nuclear warheads.[32] Some experts argue that this objective, the recovery of pluto-

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* The nuclear fuel cycle is defined as all activities involving nuclear materials beginning with the mining of uranium ore, through refining and enriching of the ore, through reactor fuel or weapons fabrication, use in reactors, reprocessing and ultimate isolation.

nium from reactor spent fuel, is the primary motivation behind DOE's push for the rapid commercialization of food irradiation. Among the experts who have examined DOE's role in the development of nuclear weapons in relationship with nuclear power and the disposal of high-level radioactive wastes are Dr. Thomas Cochran, staff scientist with the Natural Resources Defense Council, Dr. Richard Piccioni, radiation physicist with Accord Research and Educational Associates and member of the Board of Directors of Food and Water, Inc., and Robert Alvarez of the Environmental Policy Institute.

Another likely factor contributing to DOE's sponsorship of food irradiation may be its urgent need to find a solution to the politically explosive high-level radioactive waste disposal problem. Food irradiation offers a partial solution because it requires the recycling of the cesium portion of that waste to irradiate food. According to the DOE's Byproducts Utilization Program brochure, fully 55% of the total radioactivity in reprocessed military high-level radioactive waste currently in storage is cesium, for which DOE has no permanent waste disposal facilities. Cesium also comprises a substantial percentage of commercial radioactive waste. Food irradiation would serve the DOE by recycling cesium-137 from spent fuel and dispersing it to a thousand sites around the country.

Corroborating the concern that cesium-137 from commercial high-level radioactive waste may be recycled as a valuable "source material" is the fact that the NRC, in February 1986, proposed to redefine high level radioactive waste in a manner that could exclude the comparatively short-lived cesium-137 (30 year half-life and 300-600 year hazardous lifespan) from the Federal Deep Geologic Repository (i.e. permanent burial facility) for which DOE is responsible.* NRC argued that only very long-lived radioactive waste (like technetium-99 with a half-life of 212,000 years) would require permanent geologic disposal. Under federal law and NRC regulations, cesium-137 is considered a short-lived, although biologically hazardous, radioactive isotope. If it is recycled to commercial food irradiators, the wastes from those facilities, if properly diluted or mixed with non-radioactive materials, could be declared to be "low-level" wastes. Under the 1980 Federal Low-Level Radioactive Waste Policy Act, each state is responsible for the disposal of the wastes which the NRC defines as low-level. Thus, by promoting the use of cesium-137 for food irradiation, DOE may be able to divest itself of the responsibility for the disposal of cesium-137 as high-level waste. We have found that most states are entirely unaware of this proposed change and its significance. In light of the potential benefits which would accrue to the DOE from a thriving food irradiation industry which utilized cesium-137, it is not surprising to learn that in the case of the Florida demonstration irradiator, DOE recently offered to provide free cesium-137 and is making funding contingent on the use of cesium-137 instead of cobalt-60. (For further information on why the DOE supports food irradiation, see Appendix C.)

Food irradiation is not confined to the U.S. The International Atomic Energy Agency, the Food and Agriculture Organization, and the World Health

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* In contrast to cesium-137, cobalt-60 has a half-life of 5 years and iodine-131 has a half-life of 8 days. A radioactive isotope is generally considered hazardous for a period of 10-20 times the length of the half-life.

Organization have been intensifying international promotional efforts and making plans for broader commercial application of ionizing radiation technology. Since the FDA's recent approval of irradiated produce and pork, the U.S. effort has been matched by attempts to promote food irradiation in the Third World. Proponents concede that success in the Third World depends on consumer acceptance and success in developed countries. This being the case, there is no indication or likelihood that DOE will slow its plans to transfer radioactive wastes into the agricultural and food processing sector, and thereby rid itself of part of the burden of radioactive waste disposal.

Alternatives to Food Irradiation

Safe and proven alternatives for all the stated purposes of food irradiation already exist and are now in use: fruit fly sterilization, cold storage, single and double hot water dip, detection of larval infestation with acoustic devices and mechanical removal of larvae, microwaves, and infrared heat treatment, among others.[33] Even enthusiastic supporters of irradiation in the agriculture industry admit that irradiation of produce and grains will not replace all fumigants and pesticides. Furthermore, irradiation is a post-harvest means of disinfesting foods. The usual pre-harvest herbicides, fungicides, and insecticides, some having persistent residues, will still be applied to many commercial crops.

THE LABELING ISSUE

The food irradiation industry has opposed government imposition of any labeling requirements whatsoever on irradiated foods, perhaps believing that consumers, given accurate information and an option, might resist purchasing such foods. Having failed to eliminate the labeling requirement, the industry lobbied FDA to have such foods labeled as "picowaved" rather than "irradiated". The "picowaved" terminology was rejected by the FDA, but a questionable symbol was approved instead to identify irradiated whole foods: a "radura", a schematic of which is shown below. It closely resembles a flower or the EPA logo; it is not a familiar or commonly used radiation warning symbol. No label or notice to consumers is required by FDA for processed or prepared foods containing irradiated ingredients or for any restaurant food or school cafeteria food.[34] Furthermore, the FDA specifies in its 1986 ruling that the written warning "treated with ionizing radiation," will be dropped entirely after April, 1988.[35]

More than one year of the original two year labeling period has already passed. Few consumers have ever seen the written warning because irradiated foods have not yet reached the market except for two isolated and brief market tests. This fact may be related to the industry's acknowledged need for several years to gear up for production. This lead-time effectively ensures that by the time irradiated whole foods reach the market the written warning will no longer be required. An inadequately educated consumer will thus have no means of identifying irradiated food in the market or in restaurants.

ENDNOTES

1. Based on these consequences, food irradiation is hailed by its proponents as an alternative to EDB and other post-harvest fumigants and preservatives now known to be carcinogenic.

2. Donald Louria, M.D., Chairman, Department of Preventive Medicine and Community Health, New Jersey University of Medicine and Dentistry.
George Tritsch, Ph.D., Cancer Research Scientist, Roswell Park Memorial Institute, New York State Department of Health.
Steve Meshnick, M.D., Ph.D., Associate Medical Professor, The City of New York Medical School.
Jonathan B. Ward, Jr., Ph.D., the University of Texas Medical Branch.
Noel F. Sommer, Ph.D., University of California, Davis.
Samuel S. Epstein, M.D., Professor of Occupational and Environmental Medicine, the University of Illinois at Chicago.
Richard Piccioni, Ph.D., Senior Staff Scientist, Accord Research Associates.
Dr. Jozsef Barna, Central Food Research Institute, Budapest, Hungary.
Dr. S. G. Srikantia, Honorary Professor of Foods and Nutrition, Mysore University, India.
John Gofman, M.D., Ph.D., Professor Emeritus of Medical Physics at the University of California at Berkeley.
Rosalie Bertell, Ph.D., President of Board and Director of Research, International Institute of Concern for Public Health

3. The ten potential hazards enumerated herein are a sampling of the potential hazards associated with food irradiation. We are providing this short list to give the reader a sense of the range of research into and the consequences which may result from the consumption of irradiated foods. For a more complete list, please refer to Appendix A. The document entitled "Food Irradiation, Excerpts of Testimony....by Richard Piccioni" lists numerous studies of food irradiation all of which indicate potential hazards associated with the consumption of irradiated foods. Many of these studies were not even considered by the FDA in its Final Rule on food irradiation. Dr. Piccioni has stated that this list results from only a cursory review of the literature. For further discussion of the potential health hazards of food irradiation, see Appendix A.

4. Wierbicki et al., Ionizing Energy in Food Processing and Pest control, Part 1, Council for Agricultural Science and Technology, July, 1986.

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7. Bullerman, et. al., "Use of Gamma Irradiation to Prevent Aflatoxin Production in Bread," J. of Food Science, 38:1238, 1973.

8. Federal Register, April 18, 1986. 51: 13376-13399.

9. Hollowell Jr., J.G., Littlefield, L.G., "Chromosome Aberrations Induced by Plasma from Irradiated Patients, "J. S. Car. Med. Assoc., 63:437, 442, 1967.

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13. Bhaskaram, C., Sadasivan, G., "Effects of Feeding Irradiated Wheat to Malnourished Children," Am. J. Clin. Nutr., 28:130-135, 1975.

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14. (London) Daily Mail, Monday, March 3, 1986

15. Robert Alvarez, Radiation and Health Project Director, Environmental Policy Institute.

Richard Piccioni, Ph.D., Senior Staff Scientist, Accord Research Associates.

Kathleen M. Tucker, Esq. Executive Director, Health and Energy Institute.

Judith Johnsrud, Ph.D., Research Director, Food and Water, Inc.

16. Barry, J., "Radioactive Responsibility," New Jersey Daily Record, October 2, 1977.

Federal Register, June 30, 1986, 51:23612-23613

17. Dupin, C., "Probe Asked at Irradiation Plant, Isomedix Decontamination Questioned", New Jersey Daily Record, May 3, 1981.

Osby, L., "Nutronics Denies Cover-up of Leak", New Jersey Daily Record, October 15, 1983.

Federico, C., United Press International, "Feds: Dover Radiation Spill Concealed," North Jersey Advance, June 25, 1986.

18. Grecz, N., Rowley, D., and Matsuyama, A., "The Action of Radiation on Bacteria and Viruses," in Josephson, E. & Peterson, M.S., Eds. Preservation of Food by Ionizing Radiation, Vol. II, CRC Press: Boca Raton, Florida, 167 (1983).

19. The point is that explosions, whether accidental or deliberate, can breach the irradiation chamber thereby releasing highly radioactive material in the surrounding community. Dr. Richard Piccioni maintains that a food irradiation chamber is constructed in such a way that in the event of an explosion the chamber could act as a gun barrel and propel the radioactive material over extremely large areas.

20. Ragonese, Lawrence, "Possible Leak Probed at Mine Hill Cobalt Unit", The Sunday Star-Ledger, August 23, 1987.

21. Jacek S. Sivinski has made this statement at various conferences since the mid-70's.

22. In 1983, junkyard workers in Juarez, Mexico, unwittingly opened a stolen cancer therapy device and spilled the radioactive "source" material - cobalt 60. At least 200 people received significant doses of radiation.

Marshall, Eliot, "Juarez: An Unprecedented Radiation Accident", Science, 223: 1152-1154, March 1984.

23. According to Atomic Energy of Canada, Ltd., (the producers of 80% of the worlds supply of cobalt-60) there are approximately 80 million curies of cobalt-60 in use worldwide. Cesium-137 is about one fifth as powerful a gamma irradiator as cobalt 60. Therefore, much more cesium-137 is required for the operation of food irradiation facilities than cobalt-60. The construction of one thousand facilities would represent a quantum leap in the worldwide use of radioactive isotopes for irradiation purposes.

24. Contrary to what some believe, Radiation Technology, Inc. has not gone out of business. Although its license to operate was suspended by the Nuclear Regulatory Commission on two separate occasions during 1986, the NRC lifted the suspension on August 22, 1986. As a precondition to licensure reinstatement, RTI's Chief Executive Officer, Dr. Martin Welt, was barred from serving RTI in any capacity, even as a consultant.

25. United Press International, "Executive Convicted in Radiation Spill", North Jersey Advance, October 30, 1986.

26. One of the stated purposes of the Byproducts Utilization Program is to demonstrate the economic feasibility of food irradiation. "In order to assure that the promise of food irradiation technology is realized, the Department of Energy is investigating options for increasing the supplies of radiation sources." Technology Update and Future Initiative, Brochure Prepared by CH2M Hill, 1985. (See Appendix B.)

"The strategy being pursued by the Department of Energy's Byproducts Utilization Program is designed to transfer federally developed cesium-137 irradiation technology to the commercial sector as rapidly and successfully as possible." (Testimony of W.C. Remini and J.J. Jicha, Jr., submitted by F.C. Gilbert, Deputy Assistant Secretary for Nuclear Materials, United States Department of Energy, before the Procurement and Military Nuclear Systems Subcommittee of the Committee on Armed Services, House of Representatives, 98th Congress, First Session, March 1 & 2, 1983.)

27. Gilbert, F.C., Remini, W.C., Jicha, J.J. "A Plan for the Recovery and Utilization of Nuclear Byproducts from the Defense Nuclear Fuel Cycle," Testimony before the Procurement and Military Nuclear Systems Subcommittee of the Committee on Armed Services, US House of Representatives, March 1 and 2, 1983.

Tingey, G.L. "Technology of Food Irradiation," Testimony before the Subcommittee on Energy Research and Production, Committee on Science and Technology, US House of Representatives, July 26, 1984.

28. Tingey, G.L., "Technology of Food Irradiation", Testimony before the Subcommittee on Energy Research and Production, Committee on Science and Technology, US House of Representatives, July 26, 1984.

29. Dr. Richard Piccioni, Food Irradiation - A Pretext for Reprocessing of Commercial Spent Fuel and Expanded Nuclear Weapons Production, Food and Water, Inc. Jan. 1987.

30. Wald, M., "Senate Panel Blocks Funds for Weapon Reactor", New York Times, May 1, 1987.

31. And, while chemical reprocessing of commercial waste for weapons-grade plutonium production has been a technically difficult process, recently developed laser technology for isotopic separation, a technology in which the DOE has made a massive research and development commitment, promises to make feasible the purification of weapons-grade plutonium from the plutonium derived from reprocessing of commercial spent fuel.

32. These facts were provided by Dr. Richard Piccioni.

33. Health Research Group, Comments on FDA Docket 81N-0004, April 12, 1984.

34. Federal Register, April 18, 1986, 51 FR 13387-13391.

35. Ibid.

Commercial irradiation of strawberries. The bugs may not be killed and carcinogenic substances are created as an additional menace.

Food Irradiation: Contaminating our Food

by Richard Piccioni

Food irradiation has long been promoted by the nuclear industry as an effective and safe means of preserving food at minimum risk to the public. In fact, irradiation not only depletes the nutritional value of food but it also masks the bacterial contamination of rotting food. Moreover, irradiation exposes the consumer to a whole new range of carcinogens. Indeed, food irradiation should be seen for what it is: an unscrupulous attempt to find a commercial use for nuclear wastes.

In the last three years, the approval and implementation of food irradiation has created a growing concern amongst both the scientific community and the general public. In the United States, the debate centres around a series of approvals recently passed by the Food and Drug Administration (FDA) for irradiation of all grains, fruits, vegetables, pork, and spices at doses ranging from 10,000 to 3 million rads. Approval is now pending for the irradiation of poultry at 300,000 rads to protect against bacterial contamination. A second federal agency, the Department of Energy (DOE), recently received funding to promote food irradiation technology and to continue research and development in this area. At the same time, the Delaney Amendment, which prohibits the addition of carcinogenic substances to processed foods, has recently been upheld. This amendment represents a serious legal challenge to the FDA's decisions on food irradiation.

A wide-scale food irradiation programme in the US and abroad would have an adverse impact on public health in a number of ways:

- Through the consumption of carcinogenic substances generated in irradiated foods:
- Through the use of irradiation to mask bacteriological contamination of spoiled food:
- Through the replacement of fresh foods with nutritionally depleted irradiated foods:
- Through accidents involving leaks or the mishandling of the multi-megacurie radiation sources used in food irradiation plants:
- And, finally, through the environmental damage attending the operation of nuclear reactors and the reprocessing of spent nuclear fuel to provide the recquired radioactive isotopes for the food irradiation industry.

The food irradiation market is potentially enormous; irradiation of a substantial fraction of the grain and poultry consumed in the US would require the operation of hundreds of irradiation facilities.[1] Large potential markets exist in the treatment of foods and spices imported from foreign countries with lower standards of food hygiene.[2] Currently, the DOE is planning the construction of five demonstration plants, fuelled with radioactive caesium-137 generated during the production of nuclear weapons. If the plants go ahead, food irradiation would thus become a major (and dangerous) route by which military nuclear wastes are dispersed throughout the environment. A number of private companies which now irradiate medical equipment and other non-food items, using caesium-137 or cobalt-60, are actively seeking to expand their product line to include foods such as grains, poultry, citrus fruits, and berries.

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Carcinogenic and Mutagenic Risks

During radiation treatment, foods are exposed to a source of gamma-emitting cobalt-60 or caesium-137. As the radiation penetrates the food, part of the energy contained in each gamma photon is dissipatedd by the ionizing of water, protein, carbohydrate, fat, nucleic acids, vitamins, minerals, and other food components. The ionizing of these substances causes them to undergo drastic and complex chemical changes, resulting in a residue of chemically transformed material. This residue is referred to as a 'radiolytic product'. The complexity of food chemistry and the limitations of chemical analysis make it impossible to identify all radiolytic products. This, together with experimental results, causes concern that the diverse mixture of chemicals generated in irradiated food contains substances that are capable of causing cancer or genetic damage.

Examination of the scientific literature reveals a large number of research reports which attest to the presence of carcinogenic or mutagenic activity in irradiated foods and food components. Table I gives details of the diverse effects which have been observed and reported. One series of papers documents the mutagenicity of irradiated solutions of ribose, deoxyribose, and thymidine, all widespread constituents of food.[3,4,5] In work by several investigators (*see* Table I), an increased frequency of lethal sex-linked recessive mutations was observed in *Drosophila melanogaster* cultured on an irradiated medium.[6,7,8] Multiple effects have been reported in mice, rats, and hamsters fed an irradiated diet, including lethal mutations in developing germ cells, reduced sperm counts, and aneuploidy and chromosome damage in bone marrow cells (*see* Table I). Irradiated sucrose solutions have produced chromosome breaks in cultured human lymphocytes.[9] A series of experiments, using mice, rats and monkeys confirms a finding first made in a study of malnourished children[10] that a diet containing freshly irradiated wheat increased the incidence of polyploidy in peripheral blood lymphocytes.[11,12,13,14]

The majority of these studies were carried out without any attempt to determine mutagenic activity; often irradiated material was only a small component of an otherwise non-irradiated medium or diet. Thus the observation of genotoxicity is all the more alarming.

A number of workers have been able to analyse irradiated foods and food components chemically and to identify known carcinogenic and mutagenic compounds (*see* Table II). In particular, the radiolytic generation of such known mutagens as formaldehyde, formic acid, glyoxal, malondialdehyde, lipid peroxides, and quinones, is well-documented in the scientific literature (*see* references in Table II). Experiments performed by the US Army attest to the presence of benzene, a known carcinogen, in cooked, irradiated beef at levels over seven times higher than those found in cooked, non-irradiated controls.[15] One study relevant to the proposed irradiation of fish showed a synergistic effect in which lipid peroxide intermediates, formed on irradiation of unsaturated fatty acid preparations, increased the rate of oxidation of benzo(a)pyrene (an environmental carcinogen precursor widely distributed in many foods) to its active carcinogenic form.[16]

Inadequate Testing

Nonetheless, proponents of food irradiation continue to argue that safety studies show no evidence of adverse effects, other than vitamin depletion at very high doses.[17] The FDA has arbitrarily labelled as 'remote' the possibility that any radiolytic products are carcinogenic, and has granted permission to irradiate broad categories of foods, thereby eliminating the requirement for carcinogenicity testing of any specific food items.[18] The FDA has also declared an arbitrary dose of 100,000 rads to be safe for fruits and vegetables. The proposed dose for poultry is three times higher, yet the FDA has not sought evidence from would-be irradiators to determine whether or not the irradiated carcasses are carcinogenic.[19]

This position is out of line both with the FDA's legal obligation to protect the health and safety of the American people, and with the agency's usual approach to the regulation of carcinogenic substances in foods, drugs and cosmetics. Companies approaching the FDA for permission to market food additives, for example, are required to provide estimates, derived from animal studies, of the maximum carcinogenic potential of their product. The studies involve animals being observed over significant periods and tested with exaggeration factors of 1,000 or more. This approach has

Table I BIOASSAYS IN IRRADIATED ORGANIC MEDIA AND FOODS SHOWING POSITIVE MUTAGENICITY, CHROMOSOMAL DAMAGE, TERATOGENICITY OR CYTOTOXICITY

author(s)	date	irradiated material	observation	observed in
Kuzin & Alyueva	1961	plant leaves	Chromosomal damage	plant embryos
Swaminathan et al	1962	potato mash	Chromosomal damage	barley embryos
Kuzin	1963	plant leaves	mutagenicity of extracts	plant cells
Swaminathan et al	1963	culture medium	mutagenicity	Drosophila
Chopra & Swaminathan	1963	potato mash	devel. abnormalities	barley embryos
Mohn & Ehrenberg	1964	culture medium	cytotoxicity	bacteria
Berry et al	1965	glucose, fructose	cytotoxicity	human & mouse cells
Chopra	1965	culture medium	probable mutagenicity	bacteria
Wolsten et al	1965	coconut milk, sucrose	chromosomal damage	carrot explants
Parkash	1965	nucleic acids	mutagenicity	Drosophila
Rinehart & Rally	1965	culture medium	mutagenicity	Drosophila
Frey & Packard	1966	culture medium	mutagenicity	bacteria
Shaw & Hayes	1966	sucrose	chromosomal damage	human lymphocytes
Hollis & Berry	1967	glucose	cytotoxicity	mouse fibroblasts
Muldowell & Littlefield	1967	plasma	chromosomal damage	human lymphocytes
Maxwell et al	1967	pineapple	chromosomal damage	onion roots
Parkash	1967	nucleic acids	mutagenicity	Drosophila
Rinehart & Rally	1967	culture medium	mutagenicity	Drosophila
Schubert et al	1967	sucrose	cytotoxicity	bacteria
Steward et al	1967	sucrose	cytotoxicity	carrot explants
Muldowell & Littlefield	1968	plasma	chromosomal damage	human leucocytes
Moretti et al	1968	wheat endosperm	mutagenicity	wheat
Ammirato & Steward	1969	sucrose	devel. abnormalities	plant root cells
Chopra	1969	culture medium	mutagenicity	bacteria
Moutschen-Dahmen et al	1970	laboratory diet	preimplantation death	mouse
Schubert and Sanders	1971	various sugars	cytotoxicity	bacteria
Popyov et al	1972	potatoes	mutagenicity of extracts	mouse (sperm cells)
Bhaskaram & Sadasivan	1975	wheat	polyploidy	malnourished children
Vijayalaxmi & Sadasivan	1975	wheat	chromosomal damage	rat (bone marrow)
Vijayalaxmi	1975	wheat	polyploidy	rat (bone marrow)
Vijayalaxmi	1976	wheat	mutagenicity	mouse
Vijayalaxmi	1976	wheat	sperm count reduction	mouse
Vijayalaxmi	1976	wheat	polyploidy	mouse (bone marrow)
Vijayalaxmi	1976	wheat	aneuploidy	mouse (sperm cells)
Vijayalaxmi & Rao	1976	wheat	mutagenicity	rat
Vijayalaxmi & Rao	1976	wheat	sperm count reduction	rat
Aiyar & Subba Rao	1977	various sugars	mutagenicity	bacteria
RAIU-IAEA/WHO	1977	potatoes	mutagenicity of extracts	mouse
Renner	1977	laboratory diet	polyploidy	hamster
Levina & Ivanov	1978	laboratory diet	autoimmune disease	rat
Vijayalaxmi	1978a	wheat	low antibody levels	rat
Vijayalaxmi	1978b	wheat	polyploidy, other effects	monkey
Wimmer et al	1980	nucleic acids	mutagenicity	bacteria
Ivanov & Levina	1981	laboratory diet	testicular abnormalities	rat
Wimmer et al	1981	nucleosides	mutagenicity	bacteria
Wimmer & Natarajan	1981	deoxyribose	chromosomal abberations	hamster cells

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formed the basis on which thousands of compounds have been approved or banned."[3]

In the case of food irradiation, a special problem exists. Because radiolytic products do not represent a defined group of chemical compounds, they cannot be tested individually at high concentrations. The alternative, feeding animals thousands of times as much food as they would otherwise eat, or irradiating the food at doses thousands of times higher than is proposed, is not possible. There is no simple way to achieve the dose exaggeration factor required to protect the health of large populations consuming irradiated foods. As long ago as 1967, the FDA itself acknowledged the special difficulties of ascertaining the safety of irradiated food,[21] and, in 1968, the agency rescinded its earlier approval of food irradiation after serious questions arose regarding the conduct and interpretation of the experiments on which the FDA had relied. Originally, the FDA claimed that early experiments showed irradiated food not to be carcinogenic. In fact, these experiments showed a significant increase in tumours in animals fed irradiated food.[22]

In 1979, after over a decade of controversy, the FDA set up the Bureau of Food's Irradiated Food Committee (BFIFC) to develop criteria for establishing the safety of irradiated foods.[23] This group developed a theoretical model to predict levels of what they called 'unique radiolytic products' (URPs). It was the assertion of the BFIFC that only URPs – that is, substances found to be unique to irradiated foods – were of regulatory concern. To take an actual example, irradiation of beef generates the carcinogen benzene as a radiolytic product; however, because charcoal broiling also generates benzene, benzene will not qualify as a URP and is excluded from further consideration as a hazard accompanying radiation processing.

Arbitrary Limits

Lacking meaningful toxicological data, the BFIFC made a theoretical estimate of the possible risks of eating irradiated foods. At a dose of 100,000 rads, BFIFC predicted that some 30 parts per million (ppm) of total radiolytic product would be formed, and that 10 per cent of this could be unique to radiation processing; in other words, food treated with 100,000 rads would contain at most 3 ppm of URPs. The committee then made an extraordinary leap of faith: without any experimental evidence, they used their hypothetical arguments to lay down regulations defining actual use. Moreover, they stated that the 3 ppm of chemically and toxicologically undefined substances, formed in food as a result of radiation processing, would be "similar to natural food components" and safe to include as a substantial part of the diet of some 240 million Americans. Given the possible consumption of many kilograms of irradiated food per person per year by virtually the entire US population, the acceptance of the 3 ppm level is an extreme departure from known precedents for regulating numerous food substances hazardous at far lower concentrations.[24]

Currently, the FDA has adopted the BFIFC's recommendation to permit the irradiation of a wide range of food at up to 100,000 rads, without the necessity of actual toxicological testing. The BFIFC has also recommended that spices, because of their smaller contribution to the total diet, be exempted from testing at up to 3 million rads.[25] The FDA undertook a literature survey before adopting the BFIFC's theoretical approach. Of over 400 studies reviewed, only 69 satisfied the criteria for technical acceptability. Of the 69 acceptable studies, 32 reported adverse effects from feeding irradiated foods, while 37 "appeared to support safety".[25] When further selection criteria were applied, only five studies remained (roughly one per cent of published reports). These five studies reported the absence of statistically significant increases in tumours in numbers of animals fed whole irradiated foods. In none of the studies was there a significant dose exaggeration factor, leading the FDA to report:

> "... the extreme dilution of the potentially toxic unique radiolytic products in proportion to the high levels of the irradiated foods themselves, would result in an inability, as in traditional toxicology testing, to exaggerate the dose of the

Table II. IDENTIFICATION OF MUTAGENIC, CARCINOGENIC, OR CYTOTOXIC RADIOLYTIC PRODUCTS IN IRRADIATED ORGANIC MEDIA OR FOOD

author(s)	date	irradiated material	radiolytic product	comments
Phillips et al	1958	dextrose, fructose	glyoxal formaldehyde	mutagenic mutagenic
Kuzin	1963	plant tissues	organic peroxides orthoquinones	mutagenic carcinogenic
Frey & Pollard	1966	minimal cell medium	hydrogen peroxide	mutagenic, generates secondary mutagens
Kuzin	1966	plants, rat thymus, tyrosine	orthoquinones orthophenols	carcinogenic carcinogenic
Schubert et al	1967	sucrose	hydroxyalkyl peroxides glyoxal	mutagenic mutagenic
Steward et al	1967	sucrose	formic acid	mutagenic
Brude & Klamerth	1968	glucose	glyoxal malonyldialdehyde	mutagenic, binds to DNA mutagenic, binds to DNA
Chopra	1969	glucose	organic peroxides	mutagenic
Schubert & Sanders	1971	D glucose, D fructose, D mannose, D rhamnose, D galactose, D fucose	alpha, beta unsaturated carbonyl sugars	cytotoxic (toxicity increased upon heating irradiated solution)
El Zeany	1980	buffalo meat	peroxides carbonyl compounds	mutagenic cytotoxic
Wilmer et al	1981	deoxy D ribose D ribose	hydrogen peroxide malonaldehyde carbonyl compounds	mutagenic mutagenic cytotoxic
Gower & Wills	1986	benzo(a)pyrene, starch & oil mixtures	benzo(a)pyrene (oxidized) quinones malonaldehyde lipid peroxides	carcinogenic carcinogenic mutagenic mutagenic

test compound. For these reasons it would be difficult to devise a traditional toxicology study of sufficient sensitivity to provide assurances of safety for the population exposed to unique radiolytic products from irradiated foods constituting a major portion of the total diet."[25]

In spite of this, the FDA concluded that "studies with irradiated foods do not appear to show adverse toxicological effects", and it reverted to the same theoretical 'Upton' argument which it had been supposed to replace with toxicological data.[26]

There is an alternative approach to the carcinogenicity testing of irradiated foods; namely, to prepare concentrated extracts of foods after radiation exposure, and to compare the biological activity of such concentrates with similar preparations for non-irradiated controls. In a letter to *Science*, published in 1984, Drs. Samuel Epstein and John Gofman called for caution over the approval of food irradiation, and specifically suggested the testing of concentrated extracts of irradiated foods, using methodologies that have been applied elsewhere in the analysis of naturally occurring carcinogens and mutagens.[27] A small amount of work of this kind has been done, indicating the occurrence of dominant lethal mutations in the spermatozoids, spermatids, and spermatocytes of mice fed an alcohol extract of gamma-irradiated potatoes, as compared to extracts of non-irradiated controls.[28] The effect was not reproduced, however, by a Japanese group.[29] A report on food irradiation by a joint committee of the Food and Agricultural Organization (FAO), the International Atomic Energy Agency (IAEA), and the World Health Organization (WHO), notes, without citing references, that mutagenic activity has been detected in alcohol extracts of irradiated wheat.[10] Significantly, the effect, which was described as "worthy of further study" is not mentioned in the joint committee's 1981 report.[11]

Nuclear Waste and Irradiated Foods

Worldwide, there are currently some 132 large irradiation facilities in operation of a size appropriate for food irradiation: 50 of these are in the US. With minor exceptions, these facilities process exclusively non-food items, primarily disposable medical equipment.[12] If dedicated to food irradiation, each of these large irradiation plants could process approximately 150,000 metric tons of food a year at a dose of 100,000 rads.[1] Since the average North American consumes roughly 800 kg of food annually (directly or in the form of feed fed to animals), irradiation of the US food supply at 100,000 rads would require the operation of over 1,200 irradiation plants.[13] Higher doses would require more plants. For example, consumption of poultry (primarily chicken) is expected to rise to 8.6 million metric tons per year in 1987.[14] A total of 170 plants would be required to irradiate this commodity alone at the dose level laid down by the USDA (300,000 rads). Thus, in order to implement the irradiation of food on a wide scale, the number of large irradiation facilities in operation will have to increase dramatically.

Large irradiation facilities (of the type assumed in the preceding calculations) contain one million curies of gamma-emitting cobalt-60 or 4-6 million curies of caesium-137. To compensate for radioactive decay, either type of plant will have to be resupplied with approximately 120,000 curies each year. Given the number of facilities required, the quantity of installed radioactive material which would be needed for extensive food irradiation in the US alone would be in the range of one to several

irradiation, the US government has created a market for enormous quantities of radioactive material.

Significantly, the only isotope which is available in sufficient quantities for widespread food irradiation is caesium-137, a waste product of nuclear weapons production and of the civil nuclear power programme. The US Department of Energy and its predecessors have long promoted the use of caesium-137 'byproduct material' in the treatment of foods.[16] A statement from congressional testimony submitted by the DOE in 1983 provides an illuminating glimpse into the nature of the DOE's interest in food irradiation:

> "The strategy being pursued by DOE's Byproducts Utilization Program is designed to transfer federally developed caesium-137 irradiation technology to the commercial sector as rapidly and successfully as possible. The measure of success will be the degree to which this technology is implemented industrially and the subsequent demand created for Cs-137".[17]

With the DOE as supplier, food irradiation has the purpose of ridding the military of vast amounts of its nuclear wastes. The DOE has made immediately available 77 megacuries of caesium-137, obtained from military plutonium production reactors at the Hanford facility in Richland, Washington. This source of the isotope will be immediately used for the irradiation of agricultural commodities in the five prototype demonstration facilities to be constructed in the next few years. This material is only a small portion of the inventory of caesium-137 at the DOE's Hanford and Savannah River weapons plants.[18]

The quantity of caesium-137 which has been and will be produced in commercial nuclear power reactors dwarfs even the

amount produced in military irradiations. The cumulative total of caesium-137 produced in commercial US reactors amounted to some 1,100 megacuries by the end of 1985, with an annual production rate of approximately 200 megacuries per year.[39,40] This would be sufficient to fuel 540 food irradiation plants with 5 megacuries of caesium-137 in each. Congressional testimony presented by DOE officials in 1984 indicated that the DOE is interested in using caesium-137 obtained from reprocessed spent fuel from civilian reactors for food irradiation.[41] A widely circulated brochure, produced by CH2M-Hill, a major DOE contractor, presents commercial reprocessing of spent fuel as virtually the only means of supplying sufficient radioactive material to implement food irradiation on a large scale.[42]

In order to obtain caesium-137 from spent commercial reactor fuel, the fuel must first be reprocessed. Although the DOE's Barnwell facility in South Carolina is complete, no facilities are yet in operation in the US for reprocessing spent commercial fuel. Reprocessing is being carried out in England at the Sellafield facility and in France at Cap La Hague. Work has been underway for several years to modify the existing chemicals separations facility[43] at Hanford to accommodate high burn-up, zirconium-clad fuels, which would include those obtained from commercial reactors. The programme is currently on hold because of a shortage of funds. However, the DOE is apparently considering using the existing submarine fuel reprocessing facilities at Idaho National Engineering Laboratory (INEL).[44]

The DOE does not advertise its interest in commercial spent fuel reprocessing, probably because of the 1982 Mitchell-Hart-Simpson Amendment to the 1954 Atomic Energy Act, which specifically prohibits plutonium obtained from the reprocessing of spent fuel from civil reactors being used in nuclear weapons. This amendment, which was actively opposed by the DOE at the time of its enactment[45] contains a loophole in an exclusion clause permitting weapons use of civil plutonium "in case of national emergency". Thus the future of plutonium from commercial spent fuel has been kept open. The DOE continues the construction of its laser isotope separation facility at INEL which would enable DOE to make weapons grade plutonium from commercial reactor waste.

Pesticide replacement

In the absence of quantitative studies to estimate the carcinogenic risk posed by consuming irradiated foods, there is no basis to the claim that food irradiation could replace the use of carcinogenic pesticides as a means of food preservation. In 1987, the National Academy of Sciences identified 23 pesticides which together were held responsible for the vast majority of the total carcinogenic risk from pesticide residues in the US food supply.[20] Food irradiation would not eliminate these pesticides since most are herbicides, insecticides, or fungicides applied in the field to prevent pre-harvest losses.[46] In fact, since irradiated products are more susceptible to infection by moulds and fungi,[47,48] irradiation may well increase the need for post-harvest fungicides on fruits and vegetables.

Pathogens in Poultry

The highly automated and poorly regulated nature of many of the poultry production plants in the US has led to the increased danger of widespread contamination of supermarket chicken with Salmonella and other pathogenic bacteria. As part of a recent study of the poultry industry in the US, the National Academy of Sciences (NAS) estimated the health effects of the bacterial contamination of chicken carcasses during slaughter. The NAS committee called for the upgrading of hygienic standards in slaughterhouses, and recommended the setting up of a comprehensive quality assurance programme with improved methods of monitoring compliance by poultry producers.[49] These recommendations are in line with those of other critics of the poultry industry, who see the current problem of bacterial contamination as the result both of regulatory lassitude on the part of the US Department of Agriculture and of the drive to increase production on the part of the poultry producers. Reform of the industry is the subject of pending federal legislation.

Hazards of Food Irradiation Facilities

A large food irradiation plant contains roughly 100 times as much radioactivity as a typical cobalt-60 source used in hospital cancer therapy. The inventory of caesium-137 present in a large irradiator is comparable to that in a 1000 megawatt nuclear power reactor.[40] Furthermore, irradiators are inevitably open structures since food must be able to pass freely in and out of the irradiation chamber.

Workers therefore run a high risk of exposure to lethal or near-lethal doses of gamma radiation.[50,51,52] Equally, the opportunities for sabotage are numerous. The contamination of shielding pools from leaking source elements has been documented in existing irradiation plants, as has the leakage and spillage of shielding water into the surrounding environment. The mishandling of discarded gamma sources has led to two serious contamination incidents in recent years.[53,54] Indeed, as a result of mismanagement at an irradiation plant, the Nuclear Regulatory Commission (NRC) revoked the licence of a major company in the US irradiation industry.[55]

In the light of these facts, it is extraordinary that the US Environmental Protection Agency (EPA) does not require an environmental impact statement prior to the siting of irradiation facilities, and that the NRC does not require special security measures. Clearly, the pressure to 'solve' the nuclear waste problem is guiding agency decisions, as non-regulation will greatly facilitate the licensing of hundreds of new irradiation facilities. Such facilities, however, cannot be in the best interest of those who work in or live near them, nor of the general public who will have no choice but to eat food which has effectively been legally contaminated.

Conclusion

The viability of food irradiation as a processing technology is based upon three false assumptions: first, that ionizing radiation can be used safely and effectively to destroy living organisms in food without producing dangerous changes in food chemistry; second, that hazardous by-products of nuclear weapons manufacture can be used safely and effectively in the civilian sector; and third, that dispersing radioactive materials into the environment results in an acceptable level of radiation exposure for any single individual.

In fact, the chemical changes in food produced by ionizing radiation are already known to be hazardous, and the FDA's claimed ignorance of that well-documented hazard is unques-

tionally in violation of the law. recently, the Justice Department upheld a decision against the FDA by the District Court of Appeals in Washington, DC, charging that FDA had violated the Food, Drug and Cosmetic Act when it approved the use of two dyes shown by animal testing to be weak carcinogens.[56] The effect of this decision is to strengthen further the Delaney Amendment, which forbids the addition of any known human or animal carcinogen to food, drugs, or cosmetics. Since food irradiation is defined as a food additive,[18] the evidence set out in Table II shows it would be a violation of the Delaney Amendment to permit the treatment of food with irradiation.[57]

The view that the FDA's actions in the field of food irradiation have been unlawful and dangerous to public health has also been expressed at the state level; legislation banning the sale of irradiated foods has been enacted in the state of Maine, and is pending in New York, New Jersey, Alaska, Vermont, New Hampshire, and Pennsylvania. Citizen initiatives to ban irradiated food are underway in Florida and Oregon. Efforts to disperse into society at large the wastes from the manufacture of nuclear weapons is hardly a proper basis for food and public health policy. It represents a real threat to our existence, comparable to, if more protracted than, the direct use of those weapons on civilian populations. It cannot be allowed to continue.

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57. This argument is the basis of a petition submitted to FDA by two members of the New Jersey State Legislature, John H. Dorsey and John Kelly, in 1988.

NEWS RELEASE

STATE OF ALASKA

OFFICE OF THE GOVERNOR
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STEVE COWPER,
GOVERNOR

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FOR IMMEDIATE RELEASE
Feb. 7, 1989
No. 89-25

COWPER SAYS STATE TO DECLINE FOOD IRRADIATION FACILITY

JUNEAU--Gov. Steve Cowper, prompted by concerns about the potential impact on sales of Alaska seafood products, announced today that the state has opted against building a food irradiation demonstration facility in Alaska.

The Governor said the decision was made in large part because of the potential for harm to the sales of Alaska seafood. Fishermen and seafood industry officials say public fears about irradiated food could put a sizeable dent in the sales of Alaska seafood.

"I don't normally discourage the seeking of information about new techniques," Cowper said. "But I'm convinced that the association of Alaska with food irradiation will have a detrimental effect on Alaska seafood sales. That fear may not be rational, but that doesn't change the fact that Alaska can get hurt."

At issue is whether the state should apply for federal funds to build a facility to conduct tests of a process in which food is exposed to a measured dose of radiation.

-MORE-

UNITED FISHERMEN OF ALASKA

211 4th Street, Suite 106
Juneau, AK 99801
907-586-2820

UNITED FISHERMEN OF ALASKA
Resolution 89-5

WHEREAS food irradiation destroys or depletes amino acide, nucleic acids, and vitamins A, B (thiamin), B2, B3, B6, B12, C, E, K and folic acid, and

WHEREAS food high in polyunsaturated fatty acids (which are increasingly being valued for their contribution to health), when irradiated, form large molecules that cannot be degraded by the body, can partially obstruct blood vessels and increase blood pressure, and

WHEREAS food irradiation is known to produce unstable, chemically reactive free radicals which are highly toxic and increase carcinogenesis, mutogenesis and cardiovascular disease in animals and in man, and,

WHEREAS reviews of the available literature on irradiated food overwhelmingly indicate adverse effects on animals including development of testicular tumors, kidney diseases, shortened life spans, loss of weight, increased rate of infertility and death of offspring, and

WHEREAS the botulism bacterium, Clostridium botulism, is perversely resistant to gamma radiation (irradiation), while most of its natural competitors, including those that alert us to the decay of foods, are destroyed, and

WHEREAS resistant strains of Salmonellae have been developed by repeated irradiation under laboratory conditions, and

WHEREAS acceptable and effective methods of preserving food (freezing, canning, vacuum packing, etc.) already exist and irradiation does not eliminate the need for refrigeration, packaging and good food hygiene, and

WHEREAS several major markets for Alaska seafood, including Japan, Great Britain, the Scandinavian countries, West Germany, New Zealand and some states, have completely banned the sale of irradiated foor for public consumption or halted further exploration of irradiated food due to consumer opposition, and

WHEREAS the price of irradiated food will be 2 to 24 cents per pound higher than non-irradiated food, and

WHEREAS the Department of Energy has provided $400,000 to the University of Alaska, Fairbanks, to help Alaska determine the feasibility of irradiating fresh and frozen fish, other seafood and agricultural products, and

WHEREAS the Department of Energy is the primary promoter of food irradiation as a means of inexpensively extracting weapons-grade plutonium from the reprocessing of nuclear waste, and

WHEREAS the specific use of radioactive cesium-137 or other radioactive waste products for food irradiation treatment in Alaska involves another whole range of concerns, including but not limited to worker and public safety (permitted radioactive emissions are 20 times higher than nuclear power plants), transportation of nuclear waste, construction of a radiation facility in a seismically inactive and tsunami-free area, and contamination of groundwater, the food chain and the environment by the highly water-soluble cesium-137,

NOW THEREFORE BE IT RESOLVED that United Fishermen of Alaska strongly opposes the irradiation of seafood in the state of Alaska.

Theo Matthews — Feb 14, 1989

Theo Matthews
President

Date

Alaska State Legislature

Official Business

P.O. Box V
State Capitol
Juneau, Alaska 99811

REPRESENTATIVE RANDY PHILLIPS
HOUSE DISTRICT 15
(907) 465-4949

Memorandum

TO: Representative Johnny Ellis
Chairman

House Health, Education and Social Services Committee

FROM: Representative Randy Phillips RP

DATE: January 17, 1989

RE: House Bill 25
Labelling Requirements

Jim Nordlund of your staff expressed an interest in the current status of labelling requirements for irradiated foods.

At the advice of Carl Dasser, Federal-State Relations, Food and Drug Administration, I contacted Clyde A. Takeguchi, Division of Food and Color Additives, Center for Food Safety and Applied Nutrition, Food and Drug Administration, Washington, DC 20204 [telephone: (202) 472-5740]. Mr. Takeguchi advises that the labeling requirements for irradiated food have been extended until 1990. This is the requirement that both the symbol and the wording be on the item. Unless extended again, the wording will be dropped after 1990 and only the label will be required.

If you have further questions, please do not hesitate to contact me.

ATTACHMENT 17

Representative Randy Phillips
File on Food Irradiation
January 15, 1989

NOTE: *indicates a report attached to Karla Hart's 11/19/87 research
**indicates a report attached to Hart's 11/30/87 supplemental research

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UNITED FISHERMEN OF ALASKA

211 4th Street, Suite 106
Juneau, AK 99801
907-586-2820

UNITED FISHERMEN OF ALASKA

Resolution 88-2

WHEREAS food irradiation destroys or depletes amino acids, nucleic acids, and vitamins A, B (thiamine), B2, B3, B6, B12, C, E, K and folic acid; and

WHEREAS foods high in polyunsaturated fatty acids (which are increasingly being valued for their contribution to health), when irradiated, form large molecules that cannot be degraded by the body, can partially obstruct blood vessels and increase blood pressure; and

WHEREAS food irradiation is known to produce unstable, chemically reactive free radicals which are highly toxic and increase carcinogenesis, mutogenesis and cardiovascular disease in animals and in man; and

WHEREAS reviews of the available literature on irradiated food overwhelmingly indicate adverse effects on animals including development of testicular tumors, kidney disease, shortened life spans, loss of weight, increased rate of infertility and death of offspring; and

WHEREAS the botulism bacterium, Clostridium botulism, is perversely resistant to gamma radiation (irradiation), while most of its natural competitors, including those that alert us to the decay of foods, are destroyed; and

WHEREAS resistant strains of Salmonellae have been developed by repeated irradiation under laboratory conditions; and

WHEREAS acceptable and effective methods of preserving food (freezing, canning, vacuum packing, etc.) already exist and irradiation does not eliminate the need for refrigeration, packaging and good food hygiene; and

WHEREAS several major markets for Alaska seafood, including Japan, Great Britain, the Scandinavian countries, West Germany, New Zealand and some states, have completely banned the sale of irradiated food for public consumption or halted further exploration of irradiated food due to consumer opposition; and

WHEREAS the price of irradiated food will be 2 to 24 cents per pound higher than non-irradiated food; and

WHEREAS the Department of Energy has provided $400,000 to the University of Alaska, Fairbanks, to help Alaska determine the feasibility of irradiating fresh and frozen fish, other seafood and agricultural products; and

WHEREAS the Department of Energy is the primary promoter of food irradiation as a means of inexpensively extracting weapons-grade plutonium from the reprocessing of nuclear waste; and

WHEREAS the specific use of radioactive cesium-137 or other radiocative waste products for food irradiation treatment in Alaska involves another whole range of concerns, including but not limited to worker and public safety (permitted radioactive emissions are 20 times higher than nuclear power plants); transportation of nuclear waste; construction of a radiation facility in a seismically inactive and tsunami-free area; and contamination of groundwater, the food chain and the environment by the highly water-soluble cesium-137 (half-life 600 years);

NOW THEREFORE BE IT RESOLVED that United Fishermen of Alaska strongly opposes the irradiation of seafood in the state of Alaska; and

BE IT FURTHER RESOLVED that United Fishermen of Alaska supports Senate Bill 355 and House Bill 388 which prohibit the sale of irradiated food in Alaska.

Jim Bacon
President

Date 3-1-88

III

STATE OF ALASKA
1989 LEGISLATIVE SESSION

BILL VERSION: CS HB 25(Finance)
PUBLISH DATE: 2-10-89

FISCAL NOTE

REQUEST:

Revision Date:
Title: An Act relating to irradiated food.
Sponsor: Phillips/Brown
Requestor:

Agency Affected: Environmental Conservation
BRU: Environmental Health
Components: Sanitation

EXPENDITURES/REVENUES: (Thousands of Dollars)

OPERATING	FY 89	FY 90	FY 91	FY 92	FY 93	FY 94
PERSONAL SERVICES						
TRAVEL						
CONTRACTUAL						
SUPPLIES						
EQUIPMENT						
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING	-0-	-0-	-0-	-0-	-0-	-0-
CAPITAL	-0-	-0-	-0-	-0-	-0-	-0-
REVENUE	-0-	-0-	-0-	-0-	-0-	-0-

FUNDING: (Thousands of Dollars)

GENERAL FUND	-0-	-0-	-0-	-0-	-0-	-0-
FEDERAL FUNDS						
OTHER						
TOTAL	-0-	-0-	-0-	-0-	-0-	-0-

POSITIONS:

FULL-TIME	-0-	-0-	-0-	-0-	-0-	-0-
PART-TIME						
TEMPORARY						

ANALYSIS: (Attach a separate page if necessary)

Prepared by: House Finance Committee Phone: 465-3727
Division: Co-Chairman Ron Larson Date: 2/8/89
Co-Chairman Lyman Hoffman
Approved by Commissioner: Date:
Agency:

Distribution (by preparer):
Legislative Finance
Legislative Sponsor
Requestor
Office of Management and Budget
Impacted Agency(ies)

STATE OF ALASKA
1989 LEGISLATIVE SESSION

BILL VERSION: HB 25
PUBLISH DATE: 2-10-89

FISCAL NOTE

REQUEST:

Revision Date: 1/20/89
Title: "An Act relating to irradiated foods."
Sponsor: Phillips & Brown
Requestor:

Agency Affected: Health & Social Services
BRU: State Health Services
Components: Laboratory Services

EXPENDITURES/REVENUES: (Thousands of Dollars)

OPERATING	FY 89	FY 90	FY 91	FY 92	FY 93	FY 94
PERSONAL SERVICES						
TRAVEL						
CONTRACTUAL						
SUPPLIES						
EQUIPMENT						
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING	-0-	-0-	-0-	-0-	-0-	-0-
CAPITAL	-0-	-0-	-0-	-0-	-0-	-0-
REVENUE	-0-	-0-	-0-	-0-	-0-	-0-

FUNDING: (Thousands of Dollars)

GENERAL FUND						
FEDERAL FUNDS						
OTHER						
TOTAL	-0-	-0-	-0-	-0-	-0-	-0-

POSITIONS:

FULL-TIME						
PART-TIME						
TEMPORARY						

ANALYSIS: (Attach a separate page if necessary)

The enactment of HB 25 would have no direct fiscal impact on the Department of Health and Social Services.

Prepared by: Elizabeth Ward, Director E Ward Phone: 465-3090
Division: Public Health Date:

Approved by Commissioner: Myra M. Munson Myra M. Munson Date: 1/20/89
Agency: Health & Social Services

Distribution (by preparer):
Legislative Finance
Legislative Sponsor
Requestor
Office of Management and Budget
Impacted Agency(ies)

1/15/90

Legislative Contracts

I.

STATE OF ALASKA
THE LEGISLATURE
LEGISLATIVE AFFAIRS AGENCY

P.O. BOX Y, STATE CAPITOL
JUNEAU, ALASKA 99811
907 465-3800

MEMORANDUM

Post approval
Routing by Legislature

TO: Representative Ben Grussendorf
Chair, House Rules

FROM: Pamela A. Stoops, Director
Administrative Services

DATE: January 8, 1990

SUBJECT: D.O. 186334

Attached please find a copy of D.O. 186334 to Yukon Office Supply. This D.O. is for routine supplies that are needed to start session. Please have this D.O. approved by House Rules.

If you have any questions, please give me a call.

Attachment

DELIVERY ORDER

FROM: STATE OF ALASKA

DELIVERY ORDER NUMBER: D.O. 186334

SHIP TO:
Legislative Affairs Agency
226 Seward Street
Juneau, AK 99801

DATE DELIVERY REQUIRED AT DESTINATION:

DATE OF ORDER: 10-26-89

F.O.B. POINT:

AGENCY REQUISITION NO./STOCK REQUEST NO.:

ORDER ISSUED IN ACCORDANCE WITH CA# QUOTE#

Exp. Date

Dated

CONTRACTOR

COMPANY CONTACT NAME	TELEPHONE NUMBER	GSS Vendor Code

Yukon Office Supply
800 Glacier Ave.
Juneau, AK 99801

Order is Based On: ☐ Air Parcel Post ☐ Surface Parcel Post ☐ Other - See Text

Shipment Via: ☐ Air Freight ☐ Surface Freight ☐ Vendor's Choice

SHIPPING INSTRUCTIONS

UDR - 69530

EN-3105208

FDE 110-10: 4-DD ENCUMBERED EXPENSE B 0384370 S 0001

ENCUMBRANCE NUMBER 3105208 ADDITIONAL AUTH RD _____
DOCUMENT NUMBER 0384370001 DATE DUE __ __ __
SOURCE RD CODE 31035 DATE ESTABLISHED 89 11 1_
TOTAL AMOUNT 16426.83 _____ SPREAD AMT(Y/N)? N
DESCRIPTION SHORT YUKON OFFICE SUPPLY_
DESCRIPTION LONG MISC. OFFICE SUPPLIES PER CONTRACT_____
AWARD_____
_____
FISCAL PERIOD CODE C LIQ RULE LN DENOMINATOR _____ RETENTION(Y/N)? N

REF	TYPE	NUMBER	AMOUNT	DATE	COMMENTS
1	DO_	186334 _____	16426.83_____	89 11 1_	YUKON OFFICE SUPPLY_____
2	UDR	69530 _____	_____	__ __ __	_____
3	___	_____	_____	__ __ __	_____
4	___	_____	_____	__ __ __	_____

FIN	AMOUNT	SY	CC	PGM	LC	ACCT	FY	NMR
1	16426.83_____	90	31924301	_____	_____	74229	90	___
2	_____	__	_____	_____	_____	_____	__	___
3	_____	__	_____	_____	_____	_____	__	___
4	_____	__	_____	_____	_____	_____	__	___

F1=QUIT 3=SUBMIT 4=BATCH ERRS 5=BASE 6=FINS 7=REFS

SEND INVOICE IN DUPLICATE TO

PAGE 1 OF PAGES | TOTAL OF ALL PAGES $ 16,426.83

REF	TYPE	NUMBER	AMOUNT	DATE	COMMENTS
1	PVN				
2	DO	186334	16,426.83	10-26-89	31924301
3					
4					

FIN	AMOUNT	SY	CC	PGM	LC	ACCT	FY	NMR DIST	NMR LIQ	OPEN ITEM TYPE	OPEN ITEM NUM	OPEN ITEM LINE	OPEN ITEM PLI
1													
2													
3													
4													

PURCHASING AUTHORITY NAME: Pamela Stoops

TITLE: Director

PURCHASING AUTHORITY'S SIGNATURE:

TELEPHONE NUMBER: (907) 465-3800

Pd 15,180.16 12/14/89

02-601 (Rev. 5/87)

DEPARTMENT

LEGISLATIVE AFFAIRS AGENCY

LAA - A
Rev. 7/84

REQUISITION

Office Supplies & Equipment

D.O. No. 186334

Acct. No. 31923~~601~~ 4301

Vendor: yukon office supply
800 glacier ave.
juneau,ak 99801

Date 10-26-89

Requested by: steve davis

Req. No. _____

D.O. Item No.	C/A Item No.	How Many	Unit of Issue	Description of Item(s)	Unit Cost	Total Cost
				see attached list per contract award		
				total		16426.83

10/27/89 per House Rules (Jeanne will approve at next Rules meeting.

Approved - Division Authorization _____ Date _____

Approved - Administrative Services Manager _____ 10/27/89

Signature - Supply Officer Steven Davis

NOTE: Send white and yellow copy to Supply Officer; retain pink copy for your files

II.

DRAFT

CONTRACT BETWEEN

HOUSE RULES COMMITTEE

AND

DAVID E. FRIEDRICHS
P.O. Box 32045
Juneau, AK 99803

CONTRACT AMOUNT: $15,240
(Excluding Extensions)

The parties to this agreement are the House Rules Committee, hereinafter referred to as the "Agency," and David Friedrichs, hereinafter referred to as the "Contractor."

THE PURPOSE OF THIS CONTRACT is to provide the Legislative Affairs Agency with armed security services.

IT IS MUTUALLY AGREED THAT:

CLAUSE I - STATEMENT OF WORK

The Contractor shall provide armed security services for the Legislature as directed by the Project Director.

CLAUSE II - PERIOD AND DATES OF PERFORMANCE AND TERMINATION

(A) The work under this contract shall be performed from January 4, 1990 through May 10, 1990.

(B) The contract may be extended on a day-to-day basis for any extension of the Second (regular) Session of the Sixteenth Legislature or any special session called before the convening of the First (regular) Session of the Seventeenth Legislature.

(C) This contract may be terminated by the Agency upon delivery of written notice to the Contractor.

CLAUSE III - PROJECT DIRECTOR

DRAFT

The Project Director shall be Malcolm McGregor, Building Manager.

CLAUSE IV - COMPENSATION AND METHOD OF PAYMENT

(A) For the work specified in this contract the Contractor shall be compensated at the rate of One Hundred Twenty and No/100 Dollars ($120.00) per day.

(B) Payments under this contract shall be made by the Agency within 90 days after receipt of a proper billing. If a payment is not made within this period, the Agency shall pay interest on the unpaid balance of the billing at the rate of 1.5 percent per month from, and including, the 91st day through the date payment is made. A payment is considered made on the date it is mailed or personally delivered to the Contractor.

(C) Billings must be approved by the Project Director.

(D) Total payments under this contract may not exceed Fifteen Thousand Two Hundred-forty and No/100 Dollars ($15,240.00), unless the contract is extended under Clause II (B).

CLAUSE V - EXPENSES

The uniform for the Contractor will be supplied by the Agency at no cost to the Contractor. The firearm to be carried by the Contractor will be supplied by the Contractor at no cost to the Agency.

CLAUSE VI - RECORDS, DOCUMENTS, AUDITS

The Contractor shall accurately maintain records that are required by the Project Director. The records are subject to inspection by the Agency or the Project Director at all reasonable times. All documents, reports and writings generated as a consequence of work done under this contract shall become the property of the Agency and, upon completion of the work or at the termination of this contract, shall be delivered to the Project Director.

CLAUSE VII - INDEMNIFICATION

The Contractor shall indemnify, save harmless, and defend the Agency, and the Agency's officer's, agents and employees from liability for any claim, including costs arising from the claim, arising from Contractor's negligence in the performance of Contractor's obligations under this contract.

CLAUSE VIII - CERTIFICATION/AUTHORIZATION

Execution of this contract was authorized by a majority of the members of the House Rules Committee on _____, 1990. The sole source justification for this contract was authorized by a majority of the House Rules Committee on _____, 1990. Execution of this contract by the chair of the committee constitutes the signed authorization required by Procurement Procedures sec. 150 (b) and sec. 040; the committee members who authorized the contract delegated their sec. 150 and sec. 040 signature responsibilities to the chair on _____, 1990.

Execution of this contract by the Executive Director or his designee hereby constitutes a certification that funds have been appropriated and encumbered for the amount of this contract.

CLAUSE IX - MODIFICATION AND PREVIOUS AGREEMENT

This agreement contains all the terms and conditions agreed upon by the parties. No other understandings, oral or otherwise, regarding the subject matter of this agreement shall be deemed to exist or to bind either of the parties to this agreement. This contract may not be modified unless in writing and signed by the parties to this contract.

IN WITNESS WHEREOF, the parties have executed this contract on the dates indicated below.

CONTRACTOR DRAFT

DAVID FRIEDRICHS DATE
Soc. Sec. No.: 535-34-4892
Bus. Lic. No.:

HOUSE RULES COMMITTEE DRAFT

REP. BEN GRUSSENDORF DATE
Chair, House Rules Committee
Procurement Officer

ACCEPTED: DRAFT

MALCOLM MCGREGOR DATE
Building Manager, Legislative Affairs Agency
Project Director

CERTIFYING AUTHORITY DRAFT

WARREN W. ENDICOTT DATE
Executive Director
Legislative Affairs Agency

DRAFT

APPROVED AS TO FORM

Theresa L. Bannister
Legal Counsel DATE 1-2-90

DRAFT

SOLE SOURCE JUSTIFICATION

The House Rules Committee has decided to contract with Terry Hanson and David Friedrichs to provide armed security services for the Second Session of the Sixteenth Legislative Session (with the option to extend during session extensions and special sessions) on the basis of Section 040 of the Legislative Procurement Procedures.

The bases for this decision are:

1) Terry Hanson and David Friedrichs have the qualifications necessary to carry a concealed firearm and receive a special police commission.

2) The Department of Public Safety indicates that they are the only two persons who currently hold special police commissions in Juneau. A contractor must have a special policy commission in order to provide armed security services. The minimum qualifications necessary to qualify for a special police commission include a minimum of 320 hours of police schooling and an additional 40 hours of firearms training.

3) Armed security services provided by Terry Hanson and David Friedrichs would be acceptable to the Department of Public Safety.

4) Terry Hanson and David Friedrichs provided armed security services to the Second Session of the Fifteenth Alaska Legislature and the First Session of the Sixteenth Alaska Legislature and are therefore familiar with the requirements of the services to be performed.

III.

DRAFT

CONTRACT BETWEEN

HOUSE RULES COMMITTEE

AND

TERRY HANSON
P.O. Box 32304
Juneau, AK 99803

CONTRACT AMOUNT: $15,240
(Excluding Extensions)

The parties to this agreement are the House Rules Committee, hereinafter referred to as the "Agency," and Terry Hanson, hereinafter referred to as the "Contractor."

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(A) The work under this contract shall be performed from January 4, 1990 through May 10, 1990.

(B) The contract may be extended on a day-to-day basis for any extension of the Second (regular) Session of the Sixteenth Legislature or any special session called before the convening of the First (regular) Session of the Seventeenth Legislature.

(C) This contract may be terminated by the Agency upon delivery of written notice to the contractor.

DRAFT

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The uniform for the Contractor will be supplied by the Agency at no cost to the Contractor. The firearm to be carried by the Contractor will be supplied by the Contractor at no cost to the Agency.

CLAUSE VI - RECORDS, DOCUMENTS, AUDITS

The Contractor shall accurately maintain records that are required by the Project Director. The records are subject to inspection by the Agency or the Project Director at all reasonable times. All documents, reports and writings generated as a consequence of work done under this contract shall become the property of the Agency and, upon completion of the work or at the termination of this contract, shall be delivered to the Project Director.

CLAUSE VII - INDEMNIFICATION

The Contractor shall indemnify, save harmless, and defend the Agency, and the Agency's officer's, agents and employees from liability for any claim, including costs arising from the claim, arising from Contractor's negligence in the performance of Contractor's obligations under this contract.

CLAUSE VIII - CERTIFICATION/AUTHORIZATION

Execution of this contract was authorized by a majority of the members of the House Rules Committee on _____, 1990. The sole source justification for this contract was authorized by a majority of the House Rules Committee on _____, 1990. Execution of this contract by the chair of the committee constitutes the signed authorization required by Procurement Procedures sec. 150 (b) and sec. 040; the committee members who authorized the contract delegated their sec. 150 and sec. 040 signature responsibilities to the chair on _____, 1990.

Execution of this contract by the Executive Director or his designee hereby constitutes a certification that funds have been appropriated and encumbered for the amount of this contract.

CLAUSE IX - MODIFICATION AND PREVIOUS AGREEMENT

This agreement contains all the terms and conditions agreed upon by the parties. No other understandings, oral or otherwise, regarding the subject matter of this agreement shall be deemed to exist or to bind either of the parties to this agreement. This contract may not be modified unless in writing and signed by the parties to this contract.

IN WITNESS WHEREOF, the parties have executed this contract on the dates indicated below.

CONTRACTOR DRAFT

TERRY HANSON DATE
Soc. Sec. No.: 387-30-2585
Bus. Lic. No.:

HOUSE RULES COMMITTEE DRAFT

REP. BEN GRUSSENDORF DATE
Chair, House Rules Committee
Procurement Officer

ACCEPTED: DRAFT

MALCOLM MCGREGOR DATE
Building Manager, Legislative Affairs Agency
Project Director

CERTIFYING AUTHORITY DRAFT

WARREN W. ENDICOTT DATE
Executive Director
Legislative Affairs Agency

APPROVED AS TO FORM

DRAFT

Theresa L. Bannister
Legal Counsel DATE 1-2-90

DRAFT

SOLE SOURCE JUSTIFICATION

The House Rules Committee has decided to contract with Terry Hanson and David Friedrichs to provide armed security services for the Second Session of the Sixteenth Legislative Session (with the option to extend during session extensions and special sessions) on the basis of Section 040 of the Legislative Procurement Procedures.

The bases for this decision are:

1) Terry Hanson and David Friedrichs have the qualifications necessary to carry a concealed firearm and receive a special police commission.

2) The Department of Public Safety indicates that they are the only two persons who currently hold special police commissions in Juneau. A contractor must have a special policy commission in order to provide armed security services. The minimum qualifications necessary to qualify for a special police commission include a minimum of 320 hours of police schooling and an additional 40 hours of firearms training.

3) Armed security services provided by Terry Hanson and David Friedrichs would be acceptable to the Department of Public Safety.

4) Terry Hanson and David Friedrichs provided armed security services to the Second Session of the Fifteenth Alaska Legislature and the First Session of the Sixteenth Alaska Legislature and are therefore familiar with the requirements of the services to be performed.

IV.

PROFESSIONAL SERVICES CONTRACT BETWEEN

DRAFT

DOUGLAS K. RICKEY
1823 Mark Alan
Juneau, Alaska 99801

AND

HOUSE RULES COMMITTEE

CONTRACT AMOUNT: $36,000

The parties to this contract, made and entered into this ____ day of _____, 1990, are the House Rules Committee, (hereinafter referred to as the "Agency,"), and Douglas K. Rickey, (hereinafter referred to as the "Consultant").

THE PURPOSE OF THIS CONTRACT IS TO PROVIDE the House Rules Committee with professional services.

IT IS THEREFORE MUTUALLY AGREED THAT:

CLAUSE I - STATEMENT OF WORK

Consultant shall, at the discretion and order of the House Rules Committee Chair, be responsible for the following:

1. Analysis, presented to the House Rules Chair orally or in writing, of the issues associated with any legislation under consideration by any committee of the Alaska Legislature;

2. Advice, oral or written, to the House Rules Chair concerning matters within the purview of the House Rules Committee, including but not limited to the following: the House Calendar, Uniform Rules of the State Legislature, and the internal administration of the Alaska House of Representatives;

3. The preparation and presentation of testimony on behalf of the House Rules Chair before any committee of the Alaska Legislature; and

4. Making himself available to the House Rules Chair, in person or by telephone, at any time during the term of this contract, for any of the purposes stated in 1 - 3 above, upon one hour notice to the consultant by the House Rules Chair. Consultant shall devote at least four hours per working day to the purposes stated in 1 - 3 above.

CLAUSE II - PERIOD AND DATES OF PERFORMANCE AND TERMINATION

(A) The work under this contract shall begin January 8, 1990 and will terminate on December 31, 1990.

(B) This contract may be terminated by the Agency upon delivery of written notice to the Consultant. If this contract is so terminated and the termination is not based on a breach by the Consultant, the

DRAFT

Consultant shall be compensated for services provided under the terms of this contract to the date of termination if the Consultant provides the Agency with a written report containing a description of the services performed, a statement of the results or conclusions formed based upon the research or analysis performed, and a copy of all documents and reports generated as a consequence of work done under this contract.

CLAUSE III - COMPENSATION AND METHOD OF PAYMENT

(A) For the work required by this contract, the Consultant shall be compensated Three Thousand and No/100 Dollars ($3,000.00) a month for Consultant's services.

(B) Payments to the Consultant shall be based on proper billings provided by the Consultant.

(C) The Procurement Officer must approve a billing before it may be paid.

(D) If a payment under (A) is not made within 90 days after the Agency has received a proper billing, the Agency shall pay interest on the unpaid balance of the billing at the rate of 1.5 percent per month from, and including, the 91st day through the date payment is made. A payment is considered made on the date it is mailed or personally delivered to the Consultant.

(E) Total payments under this contract may not exceed Thirty-six Thousand and No/100 Dollars ($36,000.00).

CLAUSE IV - EXPENSES AND DUPLICATION

(A) Except as may be otherwise provided by Clause III, the office space, equipment, supplies, clerical support and other expenses that are necessary for the Consultant to carry out the Consultant's obligations under this contract shall be supplied and paid by the Agency at no cost to the Consultant.

(B) Duplicates of any report required by this contract may be produced by the Agency; the office space, equipment, supplies, clerical support and other expenses required for the duplication shall be supplied by the Agency.

CLAUSE V - RECORDS, DOCUMENTS, AUDIT

The Consultant shall accurately maintain those records, including detailed time records, that are required by the Procurement Officer. The records are subject to inspection by the Agency or the Procurement Officer at all reasonable times. All documents and reports generated as a consequence of work done under this contract shall become the property of the State of Alaska, and the State shall own all rights included in any copyright rights for the documents and reports. Upon completion of the work or the termination of this contract, the documents and reports shall be delivered to the Procurement Officer.

DRAFT

CLAUSE VI - INDEMNIFICATION

The Consultant shall indemnify, save harmless, and defend the Agency, and the Agency's officer's, agents and employees from liability for any claim, including costs arising from the claim, arising from Consultant's negligence in the performance of Consultant's obligations under this contract.

CLAUSE VII - VENUE

In the event that the parties to this contract find it necessary to litigate the terms of the contract, venue shall be the State of Alaska, First Judicial District, at Juneau, and the contract shall be interpreted according to the laws of Alaska.

CLAUSE VIII - ASSIGNMENT

This contract may not be assigned to another party unless in accordance with Sec. 160 of the Procurement Procedures of the Alaska State Legislature.

CLAUSE IX - WORKERS' COMPENSATION

During the life of this contract, the Consultant shall, in accordance with AS 23.30.045(d), provide and maintain workers' compensation insurance. The Consultant shall require any subcontractor to provide and maintain workers' compensation insurance for the subcontractor's employees. Consultant shall provide the Agency, upon request, with written proof of the coverage required by this clause.

CLAUSE X - CERTIFICATION/AUTHORIZATION

Execution of this contract was authorized by a majority of the members of the House Rules Committee on _____. The sole source justification for this contract (EXHIBIT A) was authorized by a majority of the members of the House Rules Committee on _____. Execution of this contract by the chair of the House Rules Committee constitutes the signed authorization required by Procurement Procedures sec. 150(b) and sec. 040; the committee members who authorized the contract delegated their sec. 150 and sec. 040 signature responsibilities to the chair of the Committee on _____.

Execution of this contract by the Legislative Affairs Agency Executive Director or his designee hereby constitutes a certification that funds have been appropriated and encumbered for the amount of this contract.

CLAUSE XI - MODIFICATION AND PREVIOUS AGREEMENTS

This document contains all the terms and conditions agreed upon by the parties. No other understandings, oral or otherwise, regarding the subject matter of this contract shall be deemed to exist or to bind either of the parties to this contract. This contract may not be modified unless in writing and signed by the parties to this contract.

IN WITNESS WHEREOF, the parties have executed this contract on the dates indicated below:

CONSULTANT

DRAFT

Douglas Rickey Date
Soc. Sec. No:
Tax ID No.:
Bus. Lic. No.:

HOUSE RULES COMMITTEE

DRAFT

Rep. Ben Grussendorf Date
Chair
Procurement Officer

APPROVED AS TO FORM

Theresa L. Bannister

Legal Counsel Date 12-20-89

CERTIFYING AUTHORITY

DRAFT

Warren Endicott Date
Executive Director
Legislative Affairs Agency

DRAFT

DRAFT

Justification For Exemption

Pursuant to Section 1, subsection 040 (b) of the Procurement Procedures, as amended August 3, 1989, the following justification is submitted for the purpose of exempting the professional services contract between the House Rules Committee and Douglas K. Rickey from the procurement procedures requiring solicitation of competitive bids for professional services contracts in excess of $25,000.

1. Mr. Rickey served on the staff of the Speaker of the House from January 1987 to January 1989. From January 1989 to the present he has served as a member of the House Rules Committee staff. His prior legislative experience includes work for the Legislative Finance Division during the 1978 and 1981 legislative sessions, and as a professional assistant to former Representative Oral Freeman during the 1982 session. Mr. Rickey is a graduate of Western Washington University and the Willamette University Law School. He was engaged in the private practice of law from 1985 to 1987, and is a member in good standing of the American and Alaska Bar Associations and the American Trial Lawyers Association. He was born and raised in Alaska.

2. Since he joined my staff in January 1987, I have come to rely on Mr. Rickey's advice and counsel concerning a wide range of issues. The knowledge he has acquired from a variety of jobs with the Alaska Legislature over the past eleven years, as well as his legal training and experience, has served me well. I find his judgment of legal and legislative matters to be sound, and he has demonstrated to me a genuine appreciation for the ethical and political concerns that the Legislature reflects as an institution of government.

3. As a point of information, Mr. Rickey has been employed year round by the Alaska Legislature since January 1987, at Range 21. As of January 1990, he is entitled to receive a yearly salary of $50,952.00, plus benefits amounting to $15,564.00, for a total of $66,516.00. Under the proposed contract, Mr. Rickey will continue to provide much the same service he has been providing but for a total of $36,000.00, for calendar year 1990, a savings of $30,516.00. Because of his status as an independent contractor, Mr. Rickey will be able to perform legal work for others, as long as that work is not in conflict with his work for the House Rules Committee.

DRAFT

4. Given Mr. Rickey's knowledge and experience, and the close working relationship we have had for the past three years, I clearly find that Mr. Rickey can more satisfactorily than others provide the services I need to properly perform my duties as Chairman of the House Rules Committee.

SUBMITTED this _____ day of January, 1990,

By: _____
Rep. Ben Grussendorf
Chairman
House Rules Committee

2/14/90

SB 15

(Public School Employees Right to Strike)

ATTACHMENT #1

Senate Finance Committee Meeting
SENATE BILL 15

excerpts from testimony
SENATE RECORDS
MAY 6, 1989

DISCUSSION OF OPT OUT PROVISION

CARL ROSE. A.A.S.B.
Effecting the change under Title 23 would require cross references between the two titles in a number of areas (tenure, nonretention, etc.) Mr. Rose spoke to further problems surrounding the *opt-out provision under PERA.*

COMMITMENTS NOT TO CHANGE SB15

BOB MANNERS. N.E.A.
Senator Fischer directed a question to Mr. Manners, asking if he would be satisfied with PERA, class (3), or if an effort would be made to change the classification to (2). Mr. Manners answered that if the proposed draft legislation were to pass from committee, NEA would not seek to "change it on the floor or in the House."

SEN. DUNCAN
Senator Duncan directed attention to a May 6, 1989 memorandum from Carl Rose to Sen. Binkley and noted the following comment:

> **"Our fear is that there will not be commitments to keep the language as the Committee might pass it, that significant changes might be made on the Senate floor, in the House, or in conference committee..."**

The Senator voiced his commitment that if the proposed bill moved from committee under Title 23, class (a) (3) he would not support further changes in the Senate, House, or conference committee.

THIS COMMITMENT HAS BEEN BROKEN
SCHOOL BOARDS DO NOT SUPPORT SB15

Official Business

Alaska State Legislature

House of Representatives

Committee on Rules

P. O. Box V
Juneau, Alaska 99811

Phone:
(907) 465-3764
465-3765

HOUSE RULES COMMITTEE MEETING - WEDNESDAY, FEBRUARY 14TH, 1990

I N D E X

CORRECTION

THIS DOCUMENT
HAS BEEN REPHOTOGRAPHED
TO ASSURE LEGIBILITY

ATTACHMENT #1

Senate Finance Committee Meeting
SENATE BILL 15

excerpts from testimony
SENATE RECORDS
MAY 6, 1989

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SCHOOL BOARDS DO NOT SUPPORT SB15

Alaska State Legislature

SENATOR JIM DUNCAN

P. O. BOX V JUNEAU, ALASKA 99811-3100

(907) 465-4766

COMMITTEES
FINANCE
VICE CHAIR – HEALTH EDUCATION & SOCIAL SERVICES
BUDGET & AUDIT
BANKING & ECONOMIC DEVELOPMENT

May 9, 1989

AASB, NEA-AK, and ACSA agree that they will support the version of Senate Bill 15 which passed the Senate on Sunday, May 7, 1989.

They agree to advocate for the bill in its present form and will not seek to amend, modify, or change it except as changes may be necessary to insure technical accuracy, or reflect mutual agreement.

Carl F. N. Rose
Executive Director
AASB

Steve McPhetres
Executive Director
ACSA

Bob Manners
Executive Secretary
NEA-AK

Official Business

Alaska State Legislature

House of Representatives

Committee on Rules

P. O. Box V
Juneau, Alaska 99811

Phone:
(907) 465-3764
465-3765

HOUSE RULES COMMITTEE MEETING - WEDNESDAY, FEBRUARY 14TH, 1990

I N D E X

I

Alaska State Legislature

SENATOR JIM DUNCAN

P. O. BOX V JUNEAU, ALASKA 99811-3100

(907) 465-4760

COMMITTEES:
FINANCE
VICE CHAIR – HEALTH EDUCATION & SOCIAL SERVICES
BUDGET & AUDIT
BANKING & ECONOMIC DEVELOPMENT

May 9, 1989

AASB, NEA-AK, and ACSA agree that they will support the version of Senate Bill 15 which passed the Senate on Sunday, May 7, 1989.

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Carl F. N. Rose
Executive Director
AASB

Steve McPhetres
Executive Director
ACSA

Bob Manners
Executive Secretary
NEA-AK

IV.

STATE OF ALASKA

DEPARTMENT OF LAW

OFFICE OF THE ATTORNEY GENERAL

STEVE COWPER, GOVERNOR

REPLY TO:

☐ *1031 W 4th AVENUE*
SUITE 200
ANCHORAGE, ALASKA 99501-1994
PHONE (907) 276-3550

☐ *1st NATIONAL CENTER*
100 CUSHMAN ST
SUITE 400
FAIRBANKS, ALASKA 99701-4679

☑ *P.O. BOX K—STATE CAPITOL*
JUNEAU, ALASKA 99811-0300
PHONE (907) 465-3600

February 6, 1990

HAND-DELIVERY

Honorable Sam Cotten
Alaska House of Representatives
P.O. Box V, State Capitol
Juneau, Alaska 99811

Re: Application of sec. 4, ch. 113, SLA 1972 to SB 15

Dear Speaker Cotten:

You have asked whether sec. 4, ch. 113, SLA 1972 is still in effect. You have also asked whether it would permit school districts or regional education attendance area (REAA) school boards to opt out of the coverage of the Public Employment Relations Act (PERA) if that Act were made applicable to them in the manner provided in HCS SB 15(Fin).

> This Act is applicable to organized boroughs and political subdivisions of the state, home rule or otherwise, unless the legislative body of the political subdivision, by ordinance or resolution, rejects having its provisions apply.

We addressed you first question in a January 25, 1990 letter to Representative Lyman Hoffman, a copy of which is attached: that provision is still in effect. However, it is not at all clear how sec. 4 would apply to school districts and REAAs if HSC SB 15(Fin) were enacted.

It seems fairly clear that REAAs meet the definition of "political subdivision" as that term is used in sec. 4, ch. 113, SLA 1972. See 1976 Op. Att'y Gen. No. 15 (March 26). Less clear is the status of school districts. AS 29.35 provides that certain municipal entities are school districts for the purpose of exercising the power to provide education. AS 29.35.160; AS 29.35.260. The relationship between school boards, elected to operate school districts and municipalities, is governed by AS 14.14.060. AS 14.14.060(g) provides as follows:

> State law relating to teacher salaries and tenure, to financial support, to supervision by the department and other general laws relating to schools, governs the exercise of the functions by the borough. The school board shall appoint, compensate, and otherwise control all school employees and administration offices in accordance with this title.

On the one hand, it is the municipality which exercises the governmental power in question, education. On the other, the legislature has granted specific functions to local school boards. In its broadest sense, a political subdivision is a creature of the legislature, which "prescribes and curtails their authority." Kenai Peninsula Borough v. State, 532 P.2d 1019, 1023 (Alaska 1975). School boards have been granted the authority to control their personnel, based on AS 14.14.060(g). Further, school districts are included within a list of entities denominated as "political subdivisions" in AS 44.62.310(a), the open meeting act.

Whether REAA or municipal school boards are "legislative bodies" that would have the power to reject the coverage of PERA under sec. 4 is far from clear. Unfortunately, the legislative history is extremely sparse. sec. 4 was added to PERA on the floor of the Senate. PERA itself was a floor amendment to what had started out as a wage and hour bill introduced in the House. School districts had initially been included in the definition of "public employer" and noncertified school district employees in the definition of "public employees." Section 4 was then added, followed by noncertified school district employees and school districts being eliminated from PERA's definitions sections. See 1972 Senate Jour. 995-1007. Further complicating matters, portions of AS 14.20, the teacher collective bargaining law predates PERA, and REAAs postdate PERA. Thus, it is difficult to analyze how, if at all, relevant legislative history bears on this question.

Also, as to municipal school districts, the balance of AS 14.14.060 uses language which suggests that the powers of a school board are more regulatory than "legislative," that is their powers resemble those of an agency. In addition, the relevant municipal government maintains some legislative power over the school boards, including such legislative type functions as the appropriation of local source funds. REAAs appear to enjoy more independence. It could be argued, based on sec. 6, Art X, of the Alaska Constitution, that the legislature is the relevant "legislative body." On the other hand, the common usage of "legislative body" would support the notion that the governing body of a political subdivision (an REAA) is such a body (the REAA

board). See generally Words & Phrases, "legislative body" (1966; 1989-90 Supp.). Cf. AS 44.62.310(a).

As noted in our letter to Representative Hoffman, any effort by a school district to opt out is likely to be dealt with by the courts on a case by case basis. It should be apparent from the foregoing discussion that the applicability of sec. 4 of PERA could become a fertile ground for litigation. The best way to be certain as to the applicability of the section, especially with respect to municipal school boards, is to clarify it in this legislation.

Sincerely yours,

DOUGLAS B. BAILY
ATTORNEY GENERAL

By:
Kathleen Strasbaugh
Assistant Attorney General

KS:me

cc: Jeffrey Bush, AAG
Bob Evans, Deputy Chief of Staff
Office of the Governor

STATE OF ALASKA

DEPARTMENT OF LAW

OFFICE OF THE ATTORNEY GENERAL

STEVE COWPER, GOVERNOR

REPLY TO:

☐ *1031 W 4th AVENUE*
SUITE 200
ANCHORAGE, ALASKA 99501-1994
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☐ *1st NATIONAL CENTER*
100 CUSHMAN ST.
SUITE 400
FAIRBANKS, ALASKA 99701-4679

☒ *P.O. BOX K—STATE CAPITOL*
JUNEAU, ALASKA 99811-0300
PHONE: (907) 465-3600

January 25, 1990
HAND DELIVERY

Rep. Lyman Hoffman, Co-Chair
House Finance Committee
Alaska House of Representatives
Capitol - Room 507-C
Juneau, AK 99811

Re: CSSB 15 (fin) am - school employee collective bargaining

Dear Representative Hoffman:

You have asked the following questions regarding the above bill, which brings school employees under the coverage of AS 23.40.070-.250.

1. Whether the Public Employment Relations Act ("PERA") provision allowing political subdivisions to opt out of its coverage would apply to school districts and REAA's; and

2. Whether the Alaska Supreme Court's holding in Kenai Peninsula School District vs. Kenai Peninsula Education Association, 572 P.2d 416 (Alaska 1977) will be affected by the enactment of SB 15, which would repeal AS 14.20.550-.610.

1. Local governing bodies may still be able to opt out of PERA under this proposed legislation

Section 4 of Chapter 113, SLA 1972 provides:

> This Act is applicable to organized boroughs and political subdivisions of the state, home rule or otherwise, unless the legislative body of the political subdivision, by ordinance or resolution, rejects having its provisions apply.

In a case in which an union of municipal employees challenged the newly formed Municipality of Anchorage's ordinance opting out of PERA, the Alaska Supreme Court held that Section 4 of PERA was permanent, and that there is no time limit on the exercise of the option, provided it is not done in a way which interferes with established rights of employees. Anchorage Municipal Employees

Association v. Municipality of Anchorage, 618 P.2d 575, 579 (Alaska 1980). A local governing body must also exercise its option promptly, and not to avoid an existing obligation to bargain. Id. See also State v. Petersburg, 538 P.2d 263, 267 (Alaska 1975), holding that the right of a local government to reject the act becomes subordinate to the rights provided by the act once the local government becomes aware of substantial organizational activities on the part of its employees.

A question not answered by the cases is whether a local governing body which was previously obliged to bargain (and had bargained) under AS 14.20 would have an opportunity to opt out nonetheless. The supreme court has held that a city which validly opted out of PERA, bargained for several years with employee organizations, and at the expiration of an agreement refused to bargain any further, did not become covered by PERA, having never suggested to its employees that they were entitled to its protections. City of Fairbanks vs. Fairbanks AFL-CIO, 623 P.2d 321, 323 (Alaska 1981). It would thus seem that if a local governing body acted in good faith, it may be permitted to opt out. However, the outcome of litigation is likely to depend heavily on the facts of the case, including any bargaining history.

Because of the short time we had to answer your request, we have not researched or addressed any problems there may be including school districts and REAA's in the definition of "political subdivision". That is not to suggest that there is a problem, only that we have not been able to research the issue.

2. The impact of the bill on the holding in Kenai is probably limited, but we cannot give a definitive answer.

Your memorandum also asks whether the passage of SB 15 would have any impact on the law established by the Alaska Supreme Court in Kenai Peninsula Borough School District v. Kenai Peninsula Education Association, 572 P.2d 416 (Alaska 1977). In the Kenai decision, the court interpreted the standard of negotiability under the teacher bargaining law (AS 14.20.550 - .610). (The court also upheld the constitutionality of teacher collective bargaining in the Kenai decision. This part of the decision, based largely on a body of cases upholding similar "delegations" of power, can be expected to apply to teacher bargaining under PERA.)

Because the reasoning set out in the Kenai decision would appear to apply to teacher bargaining under PERA, it seems likely that a court would follow the Kenai holding in determining whether issues are bargainable for teachers under PERA. Because teacher bargaining would occur under a new statute, a court could, however, re-evaluate the findings in Kenai, and it is possible that a court

might evaluate the negotiability of certain issues differently.

The statutory standard defining the topics that must be negotiated is phrased differently under PERA than under the teacher bargaining law. Under the teacher bargaining law, the duty to negotiate applies to "matters pertaining to their employment and the fulfillment of their professional duties" (AS 14.20.550). Under PERA, the duty applies to "matters of wages, hours, and other terms and conditions of employment" (AS 23.40.070). A court might rely on this difference in wording to modify the holding in Kenai. However, that semantical argument is likely to be less compelling than the more substantive discussion of the Kenai opinion involving educational policy versus economic impacts.

The Kenai opinion relies on court decisions from other states which interpret different statutory standards of negotiability. Although the opinion quotes those standards, it does not note any meaningful distinction either between those different standards or with the Alaska standard. Additionally, there is a considerable body of case law from other states which defines the negotiability of various teacher bargaining issues. This law seems to be based more on general analysis of educational policy versus economic impact, rather than fine distinctions in the phrasing of the statutory duty to negotiate.

In the Kenai decision, the court interpreted AS 14.20.610 in determining the scope of the districts' duty to negotiate. AS 14.20.610 states that nothing in the teacher bargaining law may be construed to abrogate or delegate the "legal responsibilities, powers, and duties of the school board, including its right to make final decisions on policies." With the enactment of SB 15, AS 14.20.610 will be repealed, but the assumption underlying that section would continue to apply. AS 14.20.610 does not create those "legal responsibilities, powers, and duties." Those responsibilities, powers, and duties are established independently by constitution and statute. Even with the repeal of AS 14.20.610, those "responsibilities, powers, and duties" remain intact. Again, according to the general body of teacher bargaining law from other states, teacher collective bargaining does not impair the rights and responsibilities of school boards.

Further, it is at least arguable that some of the concerns addressed by AS 14.20.610 can be included in PERA's exceptions to collective bargaining. AS 23.40.250(1) indicates that the parties must bargain wages, hours, and the terms and conditions of employment. Excluded from the definition of "terms and conditions of employment" are "the general policies describing the function and purposes of a public employer". AS 23.40.250(8). The function and purposes of a public school would arguably include

those matters included in AS 14.20.610.

Despite the above comments, we are not in a position to predict how a court would interpret the duty to negotiate for teachers under PERA. Defining the boundaries of that duty, even with great specificity, is clearly within the power of the legislature. Indeed the court has gently suggested that this area could use legislative clarification. Kenai, 572 P.2d at 423.

Please let us know if you would like us to further research this question for you.

Sincerely yours,

DOUGLAS B. BAILY
ATTORNEY GENERAL

By: LuAnn Bailey
Kathleen Strasbaugh
Assistant Attorney General

LB:KS:cl

STATE OF ALASKA
1990 LEGISLATIVE SESSION

BILL VERSION: HCS CSSB 15(FIN) No. 3
PUBLISH DATE: HOUSE 2/6/90

FISCAL NOTE

REQUEST:
Revision Date:
Agency Affected: Labor
Title: "An Act including public school employees in the Public Employment Relations Act..."
BRU: Labor Standards & Safety
Sponsor: Duncan, Zharoff, et al.
Components: Wage & Hour
Requestor: House Finance

EXPENDITURES/REVENUES: (Thousands of Dollars)

OPERATING	FY 91	FY 92	FY 93	FY 94	FY 95	FY 96
PERSONAL SERVICES	64.4	64.4	64.4	64.4	64.4	64.4
TRAVEL	12.5	12.5	12.5	12.5	12.5	12.5
CONTRACTUAL	25.0	25.0	25.0	25.0	25.0	25.0
SUPPLIES	0.7	0.7	0.7	0.7	0.7	0.7
EQUIPMENT	2.4	0.0	0.0	0.0	0.0	0.0
LAND&STRUCTURES						
GRANTS,CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING	105.0	102.6	102.6	102.6	102.6	102.6
CAPITAL						
REVENUE						

FUNDING: (Thousands of Dollars)

GENERAL FUND	105.0	102.6	102.6	102.6	102.6	102.6
FEDERAL FUNDS						
OTHER						
TOTAL	105.0	102.6	102.6	102.6	102.6	102.6

POSITIONS:

FULL-TIME	1.0	1.0	1.0	1.0	1.0	1.0
PART-TIME	1.0	1.0	1.0	1.0	1.0	1.0
TEMPORARY						

ANALYSIS: (Attach a separate page if necessary)

Note: There is no fiscal impact in FY 90.

Prepared by: Tom Stuart, Director
Phone: 264-2452
Division: Labor Standards & Safety
Date: 2/5/90

Approved by Commissioner: Jim Sampson
Date: 2/5/90
Agency: Department of Labor

Distribution (by preparer):
Legislative Finance
Legislative Sponsor
Requestor
Office of Management and Budget
Impacted Agency(ies)

Fiscal Note Analysis
for
"An Act including public school employees..."

Under this bill, the Department of Labor will act as the Labor Relations Agency for all school districts in the state and be responsible for investigation of representation petitions, determination of appropriate units for collective bargaining purposes, monitoring elections and holding representation hearings.

Additionally, upon expiration of the contracts of the certificated employees who currently are covered for collective bargaining under Title 14 "Compiled School Law," a number of challenges to the representation by current employee unions can be expected. Such challenge activity, which includes investigation of petitions and all the other functions of organization, would also have to be handled by the agency. This activity is currently administered by the school boards affected.

One wage & hour investigator, located in Anchorage, will be required to conduct the investigations, monitor the elections, and hold informal hearings. In addition, one part-time clerical position will be required to provide technical support for the investigator.

In addition to the costs associated with the wage & hour investigator and clerical support position, there would be additional costs for legal support ($10.0) and printing ($1.5).

Assuming a July 1, 1990 effective date, line item costs for FY 91 would be as follows:

Personal Services	$64.4
Travel	12.5
Contractual Svcs.	25.0
Commodities	.7
Equipment	2.4
	105.0

Of these costs, only the equipment cost of $2.4 would be a one-time item.

No. 3
HCS CSSB 15(FIN)
HOUSE 2/6/90

Position Title	No.of Positions	Range/Step	Barg. Unit
Wage & Hour Investigator II	1	18A	GGU

Time Status	Staff Months	Location	Election District
PFT	12	Anchorage	

Type of Expenditure		Amount
1	2	3
Salary	$37,356	
Benefits	13,735	
Premium Pay		
Other		
Total Personal Services		$51,091
Travel		12,500
Contractual		9,282
Commodities		350
Equipment		1,200
Other		
Total Cost		$74,423
Funding Source for Total Cost		
Federal Receipts 1002		
G. F. Match 1003		
General Fund 1004		$74,423
GF Program Receipts 1005		
Other		

Justification

This position will conduct investigations and informal hearings of unfair labor practice complaints filed with this agency. The position will be responsible for monitoring school district representation elections and assisting school districts in complying with state and federal labor relations laws. The investigator will travel extensively throughout the state performing these investigations, hearings, and monitoring functions.

Contractual and commodity costs are average per-employee costs. Equipment would be a one-time expense for desk, chair, cabinets, etc.

Request For New Position

Agency: Labor
BRU: Labor Standards & Safety
Component: Wage & Hour

Revised Date

FY 90

No. 3
HCS CSSB 15(FIN)
HOUSE 2/6/90

Position Title	No.of Positions	Range/Step	Barg. Unit
Clerk Typist III	1	8A	GGU

Time Status	Staff Months	Location	Election District
PPT	6	Anchorage	

Type of Expenditure		Amount
1	2	3
Salary	$9,786	
Benefits	3,534	
Premium Pay		
Other		
Total Personal Services		$13,320
Travel		0
Contractual		4,253
Commodities		350
Equipment		1,200
Other		
Total Cost		$19,123

Funding Source for Total Cost		
Federal Receipts	1002	
G. F. Match	1003	
General Fund	1004	$19,123
GF Program Receipts	1005	
Other		

Justification

This position will provide clerical support (typing, answering telephone, mail handling, etc.) for the wage & hour investigator.

Contractual and commodity costs are average per-employee costs. Equipment would be a one-time expense for desk, chair cabinets, etc.

Request For New Position

Agency: Labor
BRU: Labor Standards & Safety
Component: Wage & Hour

Revised Date

FY 90

(C

No. 2

STATE OF ALASKA
1990 LEGISLATIVE SESSION

BILL VERSION: HCS CSSB 15(FIN)
PUBLISH DATE: HOUSE 2/6/90

FISCAL NOTE

REQUEST:

Revision Date:
Title: Public school employees in the Public Employment Relations Act
Sponsor: House Finance
Requestor: House Finance

Agency Affected: Education
BRU: K-12 Support
Components: Foundation

EXPENDITURES/REVENUES: (Thousands of Dollars)

OPERATING	FY 91	FY 92	FY 93	FY 94	FY 95	FY 96
PERSONAL SERVICES						
TRAVEL						
CONTRACTUAL						
SUPPLIES						
EQUIPMENT						
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING	-0-	-0-	-0-	-0-	-0-	-0-
CAPITAL						
REVENUE						

FUNDING: (Thousands of Dollars)

GENERAL FUND	-0-	-0-	-0-	-0-	-0-	-0-
FEDERAL FUNDS						
OTHER						
TOTAL						

POSITIONS:

FULL-TIME						
PART-TIME						
TEMPORARY						

ANALYSIS : (Attach a separate page if necessary)

Prepared by: Mary Hakala
Division: Commissioner's Office
Phone: 465-2800
Date: 2/5/90

Approved by Commissioner: William G. Demmert
Agency: Education/0
Date: 2/5/90

Distribution (by preparer):
Legislative Finance
Legislative Sponsor
Requestor
Office of Management and Budget
Impacted Agency(ies)

4/10/90

HB 124 (Sale of Merchandise by Department of Fish & Game)

Representative Ben Grussendorf, Chair
House Rules Committee

DATE: Tuesday, April 10, 1990

PLACE: Capitol 208

SUBJECT OF MEETING:

CSHB 124 (Fin); Increase Sport Fishing/Hunting License Fees

NAME	REPRESENTING	BUSINESS/PERSONAL MAILING ADDRESS	ZIP	(H) PHONE	(W) PHONE	DO YOU WANT TO TESTIFY?		WHAT SUBJECT/ WHICH BILL?
BRUCE TWOMLEY	ENTRY COMMISSION	po Box KS	99811	465-4081	586-3454	(Y)	N	HB 124 (FIN)
WARREN W. Willey	ADF+G	testify if necessary		465-4100		(Y)	N	HB 124
Ed Grasser	AOC.			463-3830		(Y)	N	HB 124
						Y	N	
						Y	N	
						Y	N	
						Y	N	
						Y	N	
						Y	N	
						Y	N	
						Y	N	