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Report of Visits to Pittsburgh Energy Research Center Pittsburgh, Pennsylvania Rockville, MD, Enviro Control, Inc. (Submitted to NIOSH under Contract No. 210-76-0171)

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15. Supplementary Notes

16. Abstract (Limit: 200 words) This report described a meeting with representatives from the Pittsburgh Energy Research Center for the purpose of discussing coal gasification projects. The safe handling of suspected carcinogens was of importance to the participants in this meeting. Several biological studies on the health hazards associated with chemical carcinogens created during the liquefaction of coal were cited. Specific safety measures to be followed by supervisors, employees, purchasing or procurement workers were delineated. Regulations concerning ventilation, storage, spillage, waste disposal, monitoring, and visitors to the site were discussed. The occupational medical examination program was described and the medical questionnaire given to all employees was attached.

17. Document Analysis a. Descriptors

b. Identifiers/Open-Ended Terms NIOSH-Publication, NIOSH-Contract, Contract-210-76-0171, Coal-workers, Coal-products, Safety-practices, Industrial-hygiene, Coal-gasification, Occupational-exposure, Industrial-health-programs

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Pittsburgh Energy Research Center
Pittsburgh, Pennsylvania
Sep 8, 1976

I had the opportunity of discussing the Pittsburgh Energy Research Center (PERC) Health and Safety Program with James Hultz and two of the PERC safety officers. I also had the opportunity of renewing my acquaintance with Dr. Irving Wender, Director of PERC, and his assistant, Mr. Robert Schlesinger. Both men expressed a great deal of interest in our NIOSH program. Mr. Schlesinger also stated some reserves about our project, namely, that it was a very large and inclusive program. He also stated his concern about anyone's ability to derive standards which would not cripple the operation of the pilot plant or commercial plant program, especially when one considers the lack of data upon which to base such standards. He also stated that he felt that the PERC Health and Safety Program for the entire lab is probably the first of such inclusive programs for coal operation at any of the national laboratories.

I spent three hours with Mr. Hultz discussing the PERC Health and Safety Program. It must be remembered that Mr. Hultz has jurisdiction over PERC's laboratories and over the construction phase of the Synthoil pilot plant, but does not have anything to do with the Synthane plant. Safe practices, Bulletin 16 (attached) "The Handling of Suspected Carcinogens," describes the work practices which PERC employees shall follow to reduce the possible hazards in handling coal-tar products. In addition, each employee is required to shower at night, then to undergo a self-made personal examination in an ultraviolet lighted room with totally surrounding mirrors. Any lesions or unexpected growth, etc., are to be immediately reported to the safety officer and to the medical department. (Mr. Hultz said he thought that Exxon in San Francisco was using a similar ultraviolet examination but with a buddy system.) PERC

Safety Bulletin 18 describes the occupational medical examination program. However, I do not believe it gives a thorough description of the medical examination itself. This examination is quite thorough and it might be of interest to obtain a copy of the types of things that are being done. Baseline medical examinations have been started and are being conducted at the present time. Mr. Hultz did want to emphasize that in the 25 years that the Bureau of Mines has operated at Bruceton, there has never been a reported case of cancer and also that he does not want there to be a reported case of work-caused cancer in the future.

Mr. Hultz has developed an extensive emergency rescue and emergency first-aid system. While the emergency rescue system is not unique, Mr. Hultz's ideas and methods for training this team or series of teams do bear looking into. The first-aid system is based on common sense. First, learn to look at the situation so that the would-be rescuer does not get killed himself. Emphasis is then placed upon what to do until the doctor or ambulance arrives. This in essence, again, is based on using the materials immediately at hand to help save a man without waiting for emergy first-aid kits, etc. This concept also bears looking into, especially for use in pilot plants.

Mr. Hultz is extremely interested in our program and stated that he is willing to do anything he could to help us, including coming down to Washington if we should like.

Safe Practices Bulletin No. 16

The Handling of Known or Suspected Carcinogens

INTRODUCTION

The possibility of chemical carcinogens being created during the liquefaction of coal has given rise to several biological studies on the health hazards associated with these processes.

In the year 1942 the first commercial unit for fluid catalytic cracking was put into operation. Since catalytic cracking of petroleum was a new operation, no information was available relative to the carcinogenicity of products obtained from this process. Support that high-boiling catalytically cracked oils constitute a potential cancer hazard was based on the fact that coal tar, which had caused occupational cancer in man, was known to contain the carcinogen hydrocarbons 3,4-benzpyrene and 1,2-benzanthracene, and it was suspected that high-boiling catalytically cracked oils contained these compounds or compounds closely related chemically. Since coal tar had caused cancer in man, it appeared reasonable to conclude that high-boiling catalytically cracked oil containing similar compounds might also cause cancer in man, provided he had sufficient exposure to the oil.

It is clear that caution is warranted, and that measures to prevent the induction of chemically caused cancer must be given serious attention. Therefore, the following practices shall be followed by employees working with coal-derived products.

PRECAUTIONARY MEASURES

Section I. - Supervisors

1. Supervisors shall inform all their employees who will be exposed to known or suspected carcinogens as to the safe handling practices in working with such chemicals, and coal liquefaction products.

2. Supervisors shall see that all precautionary measures in Section II are followed by personnel for whom they are responsible.

3. Supervisors shall report to the Safety Branch plans of alterations or new experiments involving the use of known or suspected chemical carcinogens.

Section II. - Employees

1. Employees SHALL cooperate by following the procedures and instructions given to them by their supervisor and the Safety Branch.

2. Personal hygiene is of great importance when working with coal-derived products. Do not touch your face or reproductive organs without first washing hands. A high percentage of occupational cancers caused by coal tar, shale oil, and related products have been located either on the face or reproductive organs, and usually appear first as skin cancer. It is urged that contact with these parts of the body be avoided.

3. A lesion may be defined as an abnormal change in the structure of an organ or part of the body due to injury or disease. Lesions may appear in the form of warts, moles, a patch of dead skin, or sores which are not healing properly. Such lesions would likely appear on the face, back of the neck, along the hair line, buttocks, or the reproductive organs. Check for the presence of lesions daily. If a lesion is discovered report this IMMEDIATELY to your supervisor and the Medical Department.

4. Employee working with coal-derived products shall wear whatever protective clothing is necessary to prevent direct skin contact with these products. Such clothing includes aprons, boats, gloves, and coveralls. Coverall pant legs and sleeves shall not be cut or rolled up, since this practice will expose more skin area to contamination.

5. If an oil does come in contact with the skin it shall be removed immediately by thorough washing with soap and water. Upon completion of each operation involving a known or suspected carcinogen, employees shall wash hands, forearms, face and neck before engaging in other activities.

6. All employees who work with coal-derived products that are evolving fumes or vapors, shall attempt to perform this work under a ventilation hood. If this is not feasible, an approved respirator must be worn.

7. All employees who work with coal-derived products and where there is a possibility of skin contact shall take a shower bath before leaving the plant.

8. Do not wear any clothing home that might have deposits of coal-derived products on them, including shoes. Put on clean work clothes daily. Submit soiled laundry for appropriate cleaning.

9. Pregnant wormen who are engaged in laboratory work are to notify the Medical Department. Women will be given temporary reassignment with no loss in pay.

10. Mouth pipetting of any laboratory chemical or coal-derived product is prohibited! Mechanical pipetting aids shall be used for all pipetting procedures.

Section III. - Purchasing (or) Procurement

Below are listed the fourteen chemical substances identified as carcinogens by the Occupational Safety and Health Administration of the Department of Labor. Purchase of these substances will require a co-signature from the Safety Branch;

4 Nitro biphenyl
alpha-Naphthylamine
4,4'-Methylene bis (2 - chloroaniline)
Methyl chloromethyl ether
3,3' - Dichlorobenzine (and its salts)
bis - Chloromethyl ether
beta - Naphthylamine
Benzidine
4 - Aminodiphenyl
Ethyleneimine
beta - Propiolactone
2- Acetylaminofluorene
4 - Dimethylaminoazobenzene
N - Nitrosodimethylamine

Section IV. - Ventilation

Ventilation systems in all future facilities planned for handling carcinogens shall be designed per the OSHA standard 1910.94, i.e. once through, no-branch systems with absolute filters, and shall not permit contaminants to escape into the atmosphere. Ventilation hood filters shall be changed periodically as indicated by the manufacturers' recommendation. Contaminated filters shall be placed in plastic bags and designated for disposal. Contact the Safety Branch who will see that the contaminated waste is disposed of properly.

Section V. - Storage

All known chemical carcinogens shall be stored under lock and key in quantities no greater than 500 milligrams (with the exception of benzene & chloroform) unless a written submittal and authorization is received from the Safety Branch.

Section VI. - Spillage

If a spill of a known carcinogen should occur, contact the Safety Branch. A recommended procedure for clean-up will be advised dependent upon the nature of the chemical spill.

Section VII. - Waste Disposal

All known carcinogens or carcinogenic chemical solutions designated for waste disposal shall be placed in waste disposal cans labeled "For cancer-suspected agents only." Contact the Safety Branch who will see that the contaminants are disposed of properly.

Section VIII. - Monitoring

The Safety Branch will conduct regular workplace monitoring in areas using known or suspected chemical carcinogens. Environmental and personal sampling techniques will be utilized to analyze contaminates and determine exposure concentrations. Medical examinations may be required dependent on the concentration and amount of exposure to contaminates. Respiratory Protective Equipment and other types of personal protective equipment may also be required.

Section IX. - Visitors

All visitors (persons not normally working in these areas) who wish to enter areas where known carcinogenic experiments are being conducted, MUST be informed and adhere to all previously stated precautionary measures under Section II.

Safety Bulletin No. #18

Occupational Medical Examination Program

Introduction

To monitor and insure the health of PERC employees, a comprehensive health examination program has been established and shall be conducted by a PERC physician, with the assistance for medical evaluations by a medical center, in conjunction with the Safety and Health Division. Employees shall be categorized into one of three different classifications depending on the nature of their occupation and their extent of exposure to contaminants and other health hazards.

I - Classifications

Class A - This classification shall include all pilot plant personnel, shiftworkers who must perform adjustments on functional units, employees exposed to any type of "suspected" carcinogens, mutagens, pneumoconiosis-producing dusts, or toxic laboratory chemicals whose exposure to one or more of these agents may have a detrimental effect on their health.

Class B - This classification shall include those employees whose occupation requires only intermittent exposure to plant areas and laboratory environments. Examples of these occupations would include office workers, supervisory personnel, draftsmen and engineers, stenographers, shop machinists, carpenters, etc.

Class C - This classification shall include those employees who work on jobs involving specific physical, chemical, or biological hazards, or specific stressful work environments which require health monitoring and special health examinations. This would include welders, electricians -- personnel whose occupation requires exposure to radiation, laser beams, and other known occupational stresses.

II - Determination of Classification

The classification into which an employee will be categorized - due to the nature of his occupation - will be determined by the physician, nurse, safety director, and the employee's supervisor.

III. - Scope of Examination

A. Physical Examination - All employees regardless of their classification will receive the following examination: This physical examination shall be complete and cover head, neck, eyes, ears, nose, throat, mouth, heart, lungs, breasts, abdomen, vascular and lymphatic systems, skin, musculoskeletal system, a brief neurological examination, height, weight, pulse, temperature, and blood pressure. A digital rectal examination shall be offered to all employees along with a prostrate examination for all males.

B. Laboratory Studies - The laboratory work shall include audiometry, visual acuity (near, distant, and color vision), pulmonary function tests, a complete blood count, and a fasting blood sugar test. Every biennual examination shall also include a serology, a urinalysis, a resting electrocardiogram, and a serum lipids when indicated.

C. X-Rays - All employees age 45 and above shall receive a chest x-ray yearly. All employees under the age of 45 shall receive a chest x-ray every 5 years.

D. Interim Health Status Examinations - All employees who are categorized in the Class C classification shall receive whatever analyses (i.e., urinalysis, serology, comprehensive eye examination, radiation examination) necessary to evaluate the possible effects of the specific known health hazard that they are exposed to due to the nature of their occupation. These analyses will be on a periodic basis depending on the nature of the known health hazard.

IV. - Priority for Examination

The priority for conducting examinations will be as follows:

(1) Class A personnel age 45 and over with 5 or more years of service.

(2) Class A personnel age 45 and over with less than 5 years of service but more than 1 year service.

(3) Class A personnel under 45 years of age with 5 or more years of service.

(4) Class A personnel under 45 years of age with at least 1 year of service.

(5) Class C personnel with the same priority to age and years of service as indicated for Class A personnel.

(6) Class B personnel with the same priority to age and years of service as indicated for Class A personnel.

V. - Frequency of Examination

(1) All employees age 45 and over shall be offered a comprehensive health examination annually.

(2) All employees under 45 years of age shall be offered a comprehensive health examination biennually.

(3) All employees exposed to a known health hazard which requires continuous health monitoring shall receive a special specific examination designed to diagnose specific symptoms and ailments associated with the known health hazard on a more periodic basis.

Pittsburgh Energy Research Center
Pittsburgh, Pennsylvania
Feb 24, 1977

Meeting attendees included:

James Hultz, Safety Engineer, PERC
Donald Ross, ERDA/BER
Dan Lillian, ERDA/BER
John Abrahams, ERDA/ESP
Frank Hearl, NIOSH/Morgantown
Murray Cohen, NIOSH/Rockville
James Evans, ECI
Duane Nichols, West Virginia University at Morgantown
Lee Husting, GAT, Inc.
Frank Schweighardt, PERC/Chemical and Analytical
Lloyd Lorenzi, PERC/Environmental
Richard Cimino, PERC/Safety

The meeting was opened by Mr. Hultz who described briefly the program which PERC has for its employees who are involved in any way with coal tars. Two features struck me as being rather unique. The first was that should any female operator become pregnant, she is to report immediately to Mr. Hultz. If she is employed, for example, as an operator in a coal conversion plant, Mr. Hultz will see that she is given a job away from the plant area at equal pay to her operators job, with no loss of potential raises or bonuses to which she is entitled. At the conclusion of pregnancy, she may return to her original position.

The second unique feature was the description of the new PERC ultraviolet light program. The booths containing mirrors and ultraviolet lights had just been installed at the PERC laboratories. The PERC employees who were working with coal by-products were to enter this booth after showering. While in the booth, the employees were to examine themselves for any signs of condensed aromatic hydrocarbons (which fluoresce under the ultraviolet light) which had not been washed off during showering. If any hydrocarbons were detected the employee was to return to the shower for a complete rescrubbing and once again examine themselves. Inspection time under the ultraviolet

light was limited to 15 seconds with a second 15-second interval permitted by pushing a bypass switch. Implementation of this program was delayed pending a medical review of the dangers of using ultraviolet light to detect PNA compounds. (Note: Calculations are that the PERC staff indicated that 15-second exposure to the ultraviolet light at 3240 angstroms was equivalent to 3 minutes exposure to direct sunlight. However, there is some medical question as to the possibility of ultraviolet light activating PNA compounds to a carcinogenic state.)

The meeting was then turned over to Frank Schweighardt who demonstrated the detectability of condensable aromatic hydrocarbons. The examples indicated that these materials could be detected at very low concentrations (pyrene can be detected at a level of 10 ppm).

Frank also discussed some of the work which he had done with barrier creams. He stated that in his experience he had seen a number of creams which tended to solubilize and spread over the skin surfaces the very aromatic hydrocarbons which they were suppose to protect against. He stated that his research had shown them only one barrier cream which he could recommend at that time for use of protecting against skin contact with condensable aromatic hydrocarbons. This material was skaid. The company that puts this barrier cream out also puts several other barrier creams out but this is the only one that is effective. Another barrier cream manufactured by the same company provides very good protection against the greases and oils which one comes in contact with when working around a car. However, this material will not protect against tars.

The group was then shown the ultraviolet booth and its uses were demonstrated. The interior of the booth is about 6½ feet tall, 4 feet wide, and 3 feet deep. All walls and the sliding door are lined with mirrors. An ultraviolet light tube extending from the top of the booth to the bottom is placed in each of the corners. The controls for the booth include a light switch, a timer to determine the length of time for the ultraviolet lights to be detected, and a reset switch which will permit the ultraviolet lights to be turned on a second time, and a second time only.

During the tour of the laboratory facilities, we were shown one experiment being conducted on the determination of nickel carbonyl being vented from an experimental catalyst bed. The

detectors were simply quartz tubes which were placed in furnaces to keep the temperature of the tubes above that of the decomposition temperature for nickel carbonyl. At these temperatures the nickel carbonyl would decompose and the nickel would plait on the surfaces of the tubes. (It was stated that in all probability this apparatus was not 100% efficient in recovering the decomposed nickel carbonyl. I would think that filling the tubes with a collector material such as sponge iron or a glass wool would increase the efficiency of the detector enormously.)

Synthoil Pilot Plant Visit

The Synthoil Pilot Plant is to be located near the PERC laboratories and in the same general vicinity as the Synthane Pilot Plant. The pilot plant is being sized for 10 tons of coal per day. It is unique in that most of the equipment will be inside with the exception of the reactors. To date, only the building shell exists, with very few pieces of equipment inside it. However, PERC expects to see all equipment installed and ready for operation by this fall.

We were escorted through the facility by Mr. James Lacey who will be the ERDA/PERC overseer for the project.

PITTSBURGH ENERGY RESEARCH CENTER

MEDICAL DEPARTMENT

Bruceton, Pennsylvania

PERSONAL MEDICAL HISTORY

Name: _____ Date _____
Last First Middle

Address: _____

_____
Zip Code

Home Phone _____

Age _____ Birthdate _____
Month Day Year

Occupation _____

Supervisor _____

Division _____

Bldg. No. _____ Room No. _____ Ext. No. _____

Name of Family Physician:

_____

Address _____

_____
Zip Code

In case of Emergency, notify:

Name: _____

Relationship: _____

Address: _____

_____
Zip Code

Phone: _____

PERSONAL DATA

Marital Status: (Circle all appropriate headings).

Never Married	Married (once)	Separated
Divorced	Remarried	Spouse deceased

Age at time of marriage: _____

If married, list maiden name _____

Indicate highest level of schooling achieved: _____

Indicate number of hours of work per week: _____

How many hours of physical activity or physical work do you average per week? _____

Indicate the hour that you go to sleep: _____

Indicate the hour of arising: _____

Indicate how much you smoke per day: _____

Indicate how much alcohol you consume daily: _____

How many cups of coffee or tea do you have per day? _____

Indicate your maximum weight: _____ and the year achieved _____

your minimum weight since age 20 _____ and the year achieved _____

your weight now: _____

your weight one year ago: _____

Indicate the year of your last chest x-ray: _____

Indicate the year of your last electrocardiogram (EKG): _____

Give a brief description of your present position in PERC:

_____

_____

_____

How many years in this position? _____

If you were employed elsewhere within the past five years, please define:

_____

_____

_____

REVIEW OF SYSTEMS

PLEASE CIRCLE THE APPROPRIATE ANSWER

EYES:

Have you ever had difficulty with your vision? YES NO

Do you require glasses to read? YES NO

Do you require glasses to see at a distance? YES NO

Have your eyes been red or inflamed? YES NO

Do you ever get pain or pressure in your eyes? YES NO

Have you ever been told you had glaucoma or used eye drops prescribed by a physician? YES NO

Have you ever experienced double vision? YES NO

Do you see spots before your eyes? YES NO

Have you ever had bulging of your eyeballs? YES NO

Has your vision ever blacked out even for a few moments? YES NO

Do you have difficulty distinguishing colors? YES NO

Have you ever been troubled by dryness or scratchiness of your eyes? YES NO

EARS:

Have you had difficulty with your hearing? YES NO

Have you experienced any loss of hearing? YES NO

Can you hear better from one ear than the other? YES NO

Have you had any pain in either ear or earaches? YES NO

Have you experienced a discharge or a "running" from your ear? YES NO

Have you experienced noises in your ear, such as buzzing or ringing? YES NO

NOSE:

Have you had a chronic nasal discharge or a running nose? YES NO

Have you experienced any nose bleeds within the last one year? YES NO

Are you troubled by your nose being congested or blocked? YES NO

Do you have difficulty smelling certain odors? YES NO

Do you have sinus trouble? YES NO

Have you had frequent colds? YES NO

THROAT AND MOUTH:

Have you been troubled by frequent sore throats? YES NO

Have you experienced any change in your voice? YES NO

Have you been troubled with persistent hoarseness? YES NO

Have you difficulty with dryness of your mouth? YES NO

Have you had any problems with your gums? YES NO

Have you had a sore tongue? YES NO

Do you have a postnasal drip? YES NO

Have you had any difficulty with swallowing? YES NO

RESPIRATORY:

Do you have a chronic cough? YES NO

Do you cough in the morning on arising? YES NO

Do you experience wheezing? YES NO

Have you ever had asthma? YES NO

Have you ever coughed up blood? YES NO

Have you experienced chest pain on coughing or deep breathing (pleurisy)? YES NO

Have you ever had pneumonia? YES NO

Have you ever had bronchial trouble or bronchitis? YES NO

Have you ever had emphysema? YES NO

Do you sweat excessively at night? YES NO

Have you ever had a chronic chest condition? YES NO

Have you ever had tuberculosis (T. B.)? YES NO

Have you had any difficulties in breathing? YES NO

CARDIOVASCULAR:

Has a doctor ever said that you had heart trouble? YES NO

Have you ever been told that your blood pressure was too high? YES NO

Have you ever been told that your blood pressure was too low? YES NO

Do you experience shortness of breath after climbing a flight of stairs? YES NO

Do you ever notice swelling of your ankles? YES NO

Do you sleep on more than one pillow? YES NO

Have you ever awakened at night with shortness of breath or a smothering spell? YES NO

Do you ever experience pressure, tightness, or pain in your chest with exertion or at rest? YES NO

Have you ever taken Digitalis? YES NO

Have you used Nitroglycerin? YES NO

Have you ever taken any other medication for your heart? YES NO

Have you ever used "water pills" (diuretics)? YES NO

Do you ever notice thumping in your chest or skipping of your heart? YES NO

Have you ever experienced leg cramps while walking that forced you to stop and rest? YES NO

Have you had varicose veins? YES NO

Did a doctor ever comment that your heart was enlarged? YES NO

Were you ever told you had a "heart attack"? YES NO

Did you ever have an abnormal electrocardiogram? YES NO

When your hands are exposed to cold, have they ever been painful or an unusual color? YES NO

Have you ever been told of the presence of a heart murmur? YES NO

GASTROINTESTINAL:

Have you had any persistent difficulty with poor appetite? YES NO

Are you troubled with nausea? YES NO

Have you had a "sick stomach?" YES NO

Do you have gaseousness, bloating after meals, or difficulty digesting any specific food? YES NO

Have you experienced heartburn or stomach upsets? YES NO

Do you have vomiting? YES NO

Have you ever vomited blood or material resembling coffee grounds? YES NO

Have you ever had "ulcer(s)"? YES NO

Do you experience pain in your stomach or abdomen? YES NO

Have you ever had colon trouble? YES NO

Are you troubled with constipation? YES NO

Do you use laxatives? YES NO

Have you had persistent diarrhea, dysentery, or loose bowel movements? YES NO

Have you ever noticed mucus in your bowel movements? YES NO

Do you ever awaken at night because you must have a bowel movement? YES NO

Have you noticed any change in the color of your bowel movements? YES NO

Have you ever had a black bowel movement when not taking iron or Pepto-Bismol? YES NO

Have you ever noticed red blood in your bowel movement? YES NO

Have you known of the presence of piles (hemorrhoids)? YES NO

Have you noted any narrowing or thinness of your bowel movements (like a pencil)? YES NO

Have you ever been told of gallbladder trouble or gallbladder stones? YES NO

Have you ever had yellow jaundice (yellow eyes or skin)? YES NO

Have you ever received blood transfusions? YES NO

Have you ever had liver trouble or hepatitis? YES NO

Have you ever been addicted to drugs? YES NO

Have you ever had x-rays of your stomach, intestines or colon? YES NO

Have you ever had a rupture or hernia? YES NO

Have you ever had intestinal worms or parasites? YES NO

Do you have difficulty with belching or passing gas by rectum? YES NO

RENAL:

Have you ever had a kidney stone? YES NO

Have you ever had blood in your urine? YES NO

Has your urine ever been the color of Coca-Cola? YES NO

Have you ever been treated for cystitis or urinary infection? YES NO

Have you ever been told of pus in your urine? YES NO

Have you ever had urgent urination? YES NO

Have you had burning or pain on passing your urine? YES NO

Have you had frequent or excessive urination? YES NO

Have you had to awaken at night to pass your urine? YES NO

Have you ever had scanty urine? YES NO

Have you ever had urinary retention or required the use of a catheter (or tube) in your bladder? YES NO

Have you ever had loss of bladder control, for example, when coughing or sneezing? YES NO

Have you ever had difficulty starting your urinary stream? YES NO

Have you ever been treated for nephritis or a kidney condition? YES NO

Have you ever been told of albumin (protein) in your urine, for example, during an insurance examination? YES NO

Have you had or suspected that you had a venereal disease, such as gonorrhea or syphilis? YES NO

ENDOCRINE:

Males and Females answer this whole column.

Were you ever told of the presence of sugar in your urine or "sugar diabetes"? YES NO

Were any of your children over 9 lb. at birth? YES NO

Are you troubled by fatigue? YES NO

Do you have an excess of energy? YES NO

Is your appetite excessive? YES NO

Have you ever been told of an underactive or overactive thyroid? YES NO

Have you ever had a goiter? YES NO

Have you ever taken thyroid hormone? YES NO

At what temperature do you prefer to set your thermostat in wintertime? _____ o

Have you noticed any change in your skin or hair? YES NO

Have you noticed any change in glove, shoe or hat size in the last one year? YES NO

Have you ever had any difficulty having children? YES NO

Do you have lack of sexual desire (libido)? YES NO

ENDOCRINE:

QUESTIONS FOR FEMALES ONLY:

How old were you at the onset of your monthly menstrual periods? _____yrs.

What is or was the interval between the first day of one period and the first day of the next period? _____days

How many days do or did your periods last? _____days

During my period, I use ____ pads per day: or _____tampons per day.

Indicate the month, day and year of the first day of your last menstrual period: _____

How frequently do you shave your legs or under your arms? _____

Date of last pelvic exam and Pap smear _____ done by Dr. _____

Indicate number of pregnancies: _____

number of miscarriages _____

Are your periods mostly irregular? YES NO

Have you ever missed periods? YES NO

Are you troubled with excessive bleeding with your periods? YES NO

Do you have menstrual cramps? YES NO

Do you have any vaginal discharge between periods? YES NO

Do you experience swelling, increase in your weight, or change in mood before or during your period? YES NO

Have you ever taken female hormones or birth control pills? YES NO

Have your periods stopped or have you had your menopause? YES NO

Have you had any bleeding or spotting since menopause (if applicable)? YES NO

Have you experienced hot flashes? YES NO

Do you have excess facial or body hair? YES NO

Have you ever noted a lump in your breast? YES NO

Were you ever told of cyst(s) of your breast(s)? YES NO

Have you ever had pain in your breasts? YES NO

Have you ever noted nipple discharge? YES NO

ENDOCRINE:

QUESTIONS FOR MALES ONLY:

Have you ever had any difficulty with your prostate? YES NO

Have you ever had a discharge or sore on your penis? YES NO

Have you ever had inability to have an erection (impotence)? YES NO

Indicate the age that you began to shave: _____

How frequently do you shave? _____ times per week.

NEUROLOGIC:

Are you troubled with frequent headaches or migraine? YES NO

Have you had fainting or passing out spells? YES NO

Did you ever have a seizure, convulsion or fit? YES NO

Have you ever been unconscious? YES NO

Have you ever had the room spinning about you? YES NO

Do you have any difficulty with dizziness? YES NO

Have you ever had faintness? YES NO

Have you ever had any weakness or paralysis of an arm or leg? YES NO

Have you ever had a stroke? YES NO

Have you ever had any difficulty with speech? YES NO

Have you noticed any twitches anywhere on your body? YES NO

Have you ever had any muscle wasting? YES NO

Have you ever had any difficulty with shaking or tremor? YES NO

Have you had any difficulties in walking? YES NO

Have you had any trouble with coordination or balance? YES NO

Are you left handed? YES NO

Were your parents related? YES NO

Have you had any change in feeling or sensation anywhere in your body? YES NO

Have you ever experienced any peculiar feeling, such as pins and needles, numbness or tingling? YES NO

Have you ever experienced loss of control of your bowel movements or bladder? YES NO

Would you describe yourself as moody? YES NO

Have you ever been depressed or wished that you did not have to live any longer? YES NO

Does worrying get you down? YES NO

Do you have any significant fears? YES NO

Have you had a nervous breakdown? YES NO

Were you ever a patient in a mental hospital? YES NO

Have you ever received psychiatric treatment or treatment for mental illness? YES NO

MUSCULOSKELETAL:

Do you have any joint pains? YES NO

Do you have joint stiffness? YES NO

Do you have any joint swelling? YES NO

Have you ever been told of the presence of arthritis? YES NO

Have you had any decrease in motion of any of your joints? YES NO

Have you ever experienced any broken bones? YES NO

Do you have any muscle aches or pains? YES NO

Do you presently have any difficulty with muscle or joint sprains? YES NO

Have you ever experienced rheumatism? YES NO

Are you troubled with back pain? YES NO

Have you ever had a slipped disc? YES NO

Have you ever experienced gout or severe pain in your big toe? YES NO

ALLERGY:

Have you ever experienced hives? YES NO

Have you ever noted facial swelling? YES NO

Have you had hay fever? YES NO

Have you ever had eczema? YES NO

GENERAL:

Have you had a temperature of 101° or higher any time within the last one year? YES NO

Have you ever been told of the presence of anemia or low blood count? YES NO

Have you ever had a tumor or cancer? YES NO

Have you ever had enlarged lymph glands? YES NO

Have you ever had mononucleosis? YES NO

SKIN:

Have you noticed any change in the color of your skin, either lightening or darkening? YES NO

Have you noticed any increase or decrease in sweating? YES NO

Have you experienced easy bruising or bleeding? YES NO

Do you have itchiness? YES NO

Has dry skin been a problem? YES NO

Have you had any recent rash? YES NO

Are you troubled with boils? YES NO

Have you experienced any flushing of your face? YES NO

PAST MEDICAL HISTORY:

List all OPERATIONS, the year of surgery, the hospital, the surgeon, reason for surgery, and any complications or comments. (use back of paper if necessary.)

OPERATION	YEAR	HOSPITAL	SURGEON	REASON FOR SURGERY, COMPLICATIONS OR COMMENTS:

Have you ever been advised to have an operation which was not done? _____

List any OTHER HOSPITALIZATIONS (other than for surgery or injury). Indicate the nature of the illness, the year, the hospital, the doctor and the treatment.

ILLNESS	YEAR	HOSPITAL	DOCTOR	TREATMENT

List OTHER ILLNESSES for which you were not hospitalized. Indicate the illness, the year, the doctor and the treatment.

ILLNESS	YEAR	DOCTOR	TREATMENT

Describe any INJURIES, giving the year, nature of the injury and the treatment involved.

INJURY	YEAR	TREATMENT

List all MEDICATIONS including those prescribed by physicians and patent medicines, e.g. Anacin, Tums, Alka Seltzer, vitamins, birth control pills, iron and medicines obtained yourself from the drug store. List the medication, the dosage, purpose for which taken and the frequency of use. (Please bring all medications at the time of your office visit in the original container.)

MEDICATION AND DOSE	DOCTOR	DATE	PURPOSE	FREQUENCY

List all ALLERGIES to medications.

Medication	Type of Reaction:

FAMILY HISTORY:

Indicate Name, age, and health (or if deceased, age of death and cause of death) for each of the following relatives:

Husband or Wife: _____

Mother: _____

Father: _____

Brothers: _____

_____

_____

Sisters: _____

_____

_____

List all children by name and age and give state of health (or age and cause of death.

_____

_____

_____

_____

_____

_____

_____

_____

Indicate any member of family with "sugar" Diabetes, cancer, thyroid disease, hypertension, heart disease, tuberculosis, bleeding tendencies, kidney disease, epilepsy, glaucoma, gout, nervous breakdown, ulcer, stroke, etc.

_____

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Safety Bulletin No. #18

Occupational Medical Examination Program

Introduction

To monitor and insure the health of PERC employees, a comprehensive health examination program has been established and shall be conducted by a PERC physician, with the assistance for medical evaluations by a medical center, in conjunction with the Safety and Health Division. Employees shall be categorized into one of three different classifications depending on the nature of their occupation and their extent of exposure to contaminants and other health hazards.

I - Classifications

Class A - This classification shall include all pilot plant personnel, shiftworkers who must perform adjustments on functional units, employees exposed to any type of "suspected" carcinogens, mutagens, pneumoconiosis-producing dusts, or toxic laboratory chemicals whose exposure to one or more of these agents may have a detrimental effect on their health.

Class B - This classification shall include those employees whose occupation requires only intermittent exposure to plant areas and laboratory environments. Examples of these occupations would include office workers, supervisory personnel, draftsmen and engineers, stenographers, shop machinists, carpenters, etc.

Class C - This classification shall include those employees who work on jobs involving specific physical, chemical, or biological hazards, or specific stressful work environments which require health monitoring and special health examinations. This would include welders, electricians -- personnel whose occupation requires exposure to radiation, laser beams, and other known occupational stresses.

II - Determination of Classification

The classification into which an employee will be categorized - due to the nature of his occupation - will be determined by the physician, nurse, safety director, and the employee's supervisor.

III. - Scope of Examination

A. Physical Examination - All employees regardless of their classification will receive the following examination: This physical examination shall be complete and cover head, neck, eyes, ears, nose, throat, mouth, heart, lungs, breasts, abdomen, vascular and lymphatic systems, skin, musculoskeletal system, a brief neurological examination, height, weight, pulse, temperature, and blood pressure. A digital rectal examination shall be offered to all employees along with a prostrate examination for all males.

B. Laboratory Studies - The laboratory work shall include audiometry, visual acuity (near, distant, and color vision), pulmonary function tests, a complete blood count, and a fasting blood sugar test. Every biennual examination shall also include a serology, a urinalysis, a resting electrocardiogram, and a serum lipids when indicated.

C. X-Rays - All employees age 45 and above shall receive a chest x-ray yearly. All employees under the age of 45 shall receive a chest x-ray every 5 years.

D. Interim Health Status Examinations - All employees who are categorized in the Class C classification shall receive whatever analyses (i.e., urinalysis, serology, comprehensive eye examination, radiation examination) necessary to evaluate the possible effects of the specific known health hazard that they are exposed to due to the nature of their occupation. These analyses will be on a periodic basis depending on the nature of the known health hazard.

IV. - Priority for Examination

The priority for conducting examinations will be as follows:

(1) Class A personnel age 45 and over with 5 or more years of service.

(2) Class A personnel age 45 and over with less than 5 years of service but more than 1 year service.

(3) Class A personnel under 45 years of age with 5 or more years of service.

(4) Class A personnel under 45 years of age with at least 1 year of service.

(5) Class C personnel with the same priority to age and years of service as indicated for Class A personnel.

(6) Class B personnel with the same priority to age and years of service as indicated for Class A personnel.

V. - Frequency of Examination

(1) All employees age 45 and over shall be offered a comprehensive health examination annually.

(2) All employees under 45 years of age shall be offered a comprehensive health examination biennually.

(3) All employees exposed to a known health hazard which requires continuous health monitoring shall receive a special specific examination designed to diagnose specific symptoms and ailments associated with the known health hazard on a more periodic basis.