Kajian mengenai dosis radiasi, bahaya radiasi, dan kondisi kesehatan pekerja radiasi di instalasi radiometalurgi, PTBN-BATAN, tahun 2001-2010

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Abstrak

Tesis ini membahas bahaya radiasi gamma dan tingkat radioaktifitas alpha, beta di udara laboratorium Instalasi Radiometalurgi, dosis radiasi seluruh tubuh pekerja radiasi pada tahun 2001-2010, keluhan subjektif gangguan kesehatan pekerja akibat aktifitas pekerjaan, keluhan subjektif gangguan kesehatan pekerja yang terkait gejala awal kanker dan riwayat kanker pekerja radiasi. Penelitian ini adalah penelitian cross sectional dengan desain deskriptif. Diketahui paparan tertinggi radiasi gamma adalah 68,1 µSv/jam, tingkat radioaktifitas tertinggi alpha 3 7,299 Bq/m , beta sebesar 217,475 Bq/m 3 . Tingkat radioaktifitas di udara zona II laboratorium melebihi ketentuan yang dipersyaratkan dalam laporan analisa keselamatan instalasi. Akumulasi dosis tertinggi adalah 3,9 mSv, dibawah nilai batas dosis. Pekerja radiasi tidak memiliki gejala awal terkait kanker yang harus segera ditindak lanjut. Ada pekerja radiasi yang pernah menderita kanker payudara dan pekerja radiasi yang pernah melakukan operasi benjolan di punggung. Belum dapat disimpulkan hubungan dosis radiasi dengan kanker pada pekerja. Tidak ada hubungan antara lokasi kerja dengan dosis radiasi pekerja. Saran dari penelitian adalah perlu dilakukan optimalisasi enginering conrol dan administrative control dalam pengendalian radiasi di instalasi. Diperlukan pengadaan alpha beta constinous aerosol monitor. Perlu dilakukan penelitian lebih lanjut melibatkan variabel yang belum tercakup dan jangka waktu data lebih lama. Kata kunci : Radiasi, Radioaktifitas, Keluhan Kesehatan <hr /> This thesis describe gamma radiation hazard and airborne radioactivity level of alpha , beta in Radiometalurgy Installation, whole body radiation dose of radiation workers in 2001-2010, subjective health complaints of workers due to work activities, subjective health complaint of workers due to work activities, subjective health complaints of workers related early symptoms of cancer anc history of cancer among radiation workers. This study is a cross-sectional study with descriptive design.This research found that the highest exposure to gamma radiation was 68.1 μSv/hour, the highest levels of alpha radioactivity was 7.299 Bq/m3, the highest levels of beta radioactivity was 217.475 Bq/m 3 . Levels of air radioactivity in the zone II laboratory exceeds the provisions required. the highest of dose accumulation was 3.9 mSv which is under the limit dose. Radiation workers do not have early symptoms of cancer-related information that must be tackled immediately. There are radiation workers who had suffered breast cancer and radiation workers who had surgery lump in the back. Not to be inferred relationship of radiation dose to cancer in workers. There was no relationship between work sites with worker radiation doses. Advice from research is necessary to optimize enginering Conrol and administrative control in the control of radiation at the installation. Necessary procurement alpha beta continous aerosol monitor. Need to do more research involving more variable that has not been covered and the data for longer durations. Key Words: Radiation, Radioactivity, Health complaints