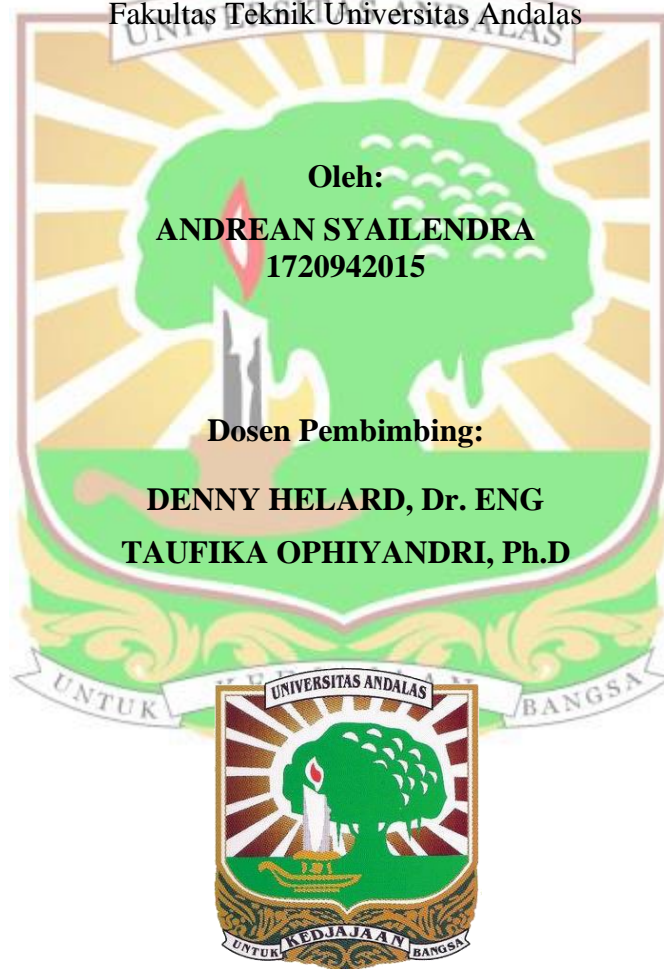


**PENILAIAN INDEKS KERENTANAN INFRASTRUKTUR AIR
MINUM KOTA PADANG TERHADAP POTENSI BENCANA
GEMPA BUMI DAN TSUNAMI
(STUDI KASUS : SPAM GUNUNG PANGILUN
PERUMDA AIR MINUM KOTA PADANG)**

TESIS

Sebagai salah satu syarat untuk menyelesaikan
Program Strata - 2 pada
Program Studi Magister Teknik Lingkungan
Fakultas Teknik Universitas Andalas



**PROGRAM STUDI MAGISTER TEKNIK LINGKUNGAN
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Abstrak

Penelitian ini bertujuan untuk memberikan angka indeks dan tingkat kerentanan sekaligus rekomendasi terhadap infrastruktur SPAM Gunung Pangilun Perumda Air Minum Kota Padang akibat potensi bencana gempa bumi dan tsunami. SPAM Gunung Pangilun melayani area dataran rendah dekat pesisir pantai sekaligus area lokasi institusi dan perkantoran penting tingkat provinsi Sumatera Barat dan kota Padang. Penilaian indeks kerentanan infrastruktur SPAM Gunung Pangilun meliputi Infrastruktur Sumber (Intake), Jaringan Pipa Transmisi, IPA dan Reservoir serta Jaringan Pipa Distribusi Utama. Penilaian indeks kerentanan dilakukan dengan cara melakukan pembobotan dan skoring terhadap faktor-faktor kerentanan pada komponen SPAM Gunung Pangilun akibat potensi bencana gempa bumi dan tsunami. Tingkat kerentanan dari infrastruktur air minum diklasifikasikan menjadi rendah, menengah dan tinggi. Hasil dari indeks kerentanan yang telah didapatkan disajikan ke dalam peta tingkat kerentanan infrastruktur air minum SPAM Gunung Pangilun setelah dilakukan perhitungan total nilai vulnerability index (VI) dari masing-masing parameter kerentanan. Hasil penilaian indeks didapatkan tingkat kerentanan masing-masing komponen infrastruktur SPAM terhadap gempa bumi dan tsunami secara berturut-turut Intake “menengah” dan “rendah”, Jaringan Pipa Transmisi “rendah” dan “rendah”, IPA dan Reservoir “tinggi” dan “rendah” serta Jaringan Pipa Distribusi untuk gempa bumi 68,82% nya “menengah” dan tsunami 83,24% nya “tinggi”. Rekomendasi yang diberikan terhadap infrastruktur SPAM Gunung Pangilun secara teknis yaitu dengan mengaplikasikan teknik rekayasa pada infrastruktur SPAM yang tahan terhadap bencana gempa bumi dan tsunami, serta secara non teknis/administratif seperti memberikan pelatihan pada pihak terkait dan membentuk sebuah divisi yang khusus menangani perawatan infrastruktur SPAM.

Kata Kunci: Infrastruktur SPAM Gunung Pangilun, Gempa Bumi dan Tsunami, Indeks Kerentanan, Tingkat Kerentanan, Rekomendasi



Abstract

This study aims to provide index numbers and vulnerability levels as well as recommendations for the infrastructure of SPAM Gunung Pangilun Perumda Air Minum Kota Padang due to the potential for earthquake and tsunami disasters. SPAM Gunung Pangilun serves areas near the coast as well as the location of important institutions and offices at the provincial level of West Sumatra and the city of Padang. The assessment of the vulnerability index of the infrastructure SPAM Gunung Pangilun includes Intake, Transmission Pipelines, IPA and Reservoirs and Main Distribution Pipelines. The vulnerability index assessment is carried out by weighting and scoring the vulnerability factors in the SPAM Gunung Pangilun component to the potential for earthquake and tsunami disasters. The vulnerability level of SPAM is classified into low, medium and high. The results of the vulnerability index that have been obtained are presented in a map of the vulnerability level of the SPAM Gunung Pangilun after calculating the total vulnerability index (VI) value of each vulnerability parameter. The index assessment results obtained the level of vulnerability of each component of the infrastructure SPAM to earthquakes and tsunami, respectively, Intake "medium" and "low", Transmission Pipelines "low" and "low", IPA and Reservoir "high" and "low" and Distribution Pipelines for the 68,82% earthquake "medium" and the tsunami 83,24% "high". Recommendations given to the infrastructure SPAM Gunung Pangilun are technically applying engineering techniques to infrastructure SPAM that is resistant to earthquakes and tsunami, as well as non-technical/administrative such as providing training to related parties and forming a division that specifically handles SPAM infrastructure maintenance.

Keywords: *Infrastructure of SPAM Gunung Pangilun, Earthquakes and Tsunami, Vulnerability Index, Vulnerability Level, Recommendation*

