

## Transcript: ALMR PMI Program

Welcome to this Alaska Land Mobile Radio training presentation on the ALMR Preventative maintenance program.

Just like subscriber radios, the ALMR system is required to be maintained in order to ensure reliability and proper operation. The ALMR system management and operations management offices has a maintenance program to ensure reliability for all sites. This maintenance can include hardware replacements or software updates to the AMR system.

In addition to ALMR specific maintenance, the State of Alaska Telecommunications System maintenance can also affect the ALMR system. In this video, we will review the four most common types of maintenance and what you can expect during each window.

The ALMR system maintenance generally consists of maintenance to each tower site. Remember the ALMR system has over 85 tower sites throughout the state. Each of those receives annual maintenance visits during this visit, inspections are conducted to ensure that hardware such as radio cables, antennas and other components are still in good working order.

The radios at each site are tested to be sure they are transmitting and receiving still on the correct frequency and make sure that any alignment that is required takes place. During these annual maintenance visits, there may be brief downtime during some parts of the operation. In addition, during maintenance windows, some site channels may be offline. This will reduce the capacity at the site, but will not completely takedown the site while the maintenance is occurring.

In addition to physical maintenance at each site, the system components may be updated, especially for software updates. This is often referred to when the zone controller gets updated as the quarterly zone controller rollover or zone controller update. These are published in the Daily System report emails and are notified personally at dispatch centers when these take place, typically in the early morning hours.

All maintenance downtime is minimized to the extent possible. However, some variation in preannounced maintenance may occur, especially at the individual sites. This is because many of our sites are accessible only by helicopter and weather, and other factors may influence scheduling. Dispatch centers are kept up to date through maintenance windows and are notified when there is going to be any downtime at a particular site so their users can be aware.

The State of Alaska Telecommunications System is primarily microwave telecommunications network that provides the connections between each ALMR site and the ALMR master sites. Because these connections involve microwave radios, the routers and other associated equipment may be updated periodically. This often occurs in modern times through software updates, but can also occur on site.

Physical hardware replacement and maintenance can also occur at sites that may or may not cause downtime. The SATS system involves many of the associated components that the ALMR system depends on, in addition to communications. This can involve the physical towers themselves, generators, batteries and other electrical components as well as heating ventilation and air conditioning systems monitoring and other telemetry, SATS system maintenance is typically scheduled, similar to the all of our system where each site has at least one annual visit.

During that time, there may be maintenance effects occurring. SATS system maintenance that affects the ALMR system is also published in the system status report.

Physical hardware maintenance and replacements can also occur periodically as needed. In addition to periodic maintenance, some equipment replacement is required during the life of a component. For example, severe weather may damage and tear cables or other components, and they require periodic replacement. ALMR system components have been replaced in the 2023 to 2025 time frame as part of a major system upgrade for TDMA. This replacement schedule should be completed in calendar year 2025 And should require minimal replacements for maintenance and upgrades for the foreseeable next few years. Hardware components that require downtime can vary from a brief replacement window.

There are some ALMR sites that are not connected via the state of Alaska Telecommunications system, but are connected via commercial telecommunications circuits through commercial providers. These providers may or may not notify us of maintenance or other emergency situations. Therefore, circuit failures or maintenance are another possible cause for downtime to an all of our site.

If we are notified, we will provide notice to our users. However, there has historically been maintenance issues or other repairs that are required that may take place with short notice.

Commercial circuits are only to a small number of Alomar sites in certain areas, but can affect the performance of the entire site.

The primary means of announcing upcoming scheduled maintenance is the daily system status report. This is sent to ALMR members every weekday and details scheduled maintenance and other system issues that may affect our users. Each system status report will indicate the zone site, the potential scheduled date, and what maintenance is required. You can see on this example that the estimated time for outage is put on the report. Major downtimes such as these will be coordinated with the dispatch centers to be sure that there are no critical issues or calls for service underway at the time before the site is taken offline.

If you do not receive the daily system status and are interested, please contact the Almar help desk to be placed on the distribution list or if you have any questions on ALMR system maintenance.