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JAMES E. DUNSTAN
ADMITTED IN D.C. AND VA.

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September 11, 1995

OUR FILE NO.
1049-101-63

Mr. William F. Caton, Acting Secretary
Federal Communications Commission
Washington, D.C. 20554

Re: ET Docket No. 93-59
RM-8092

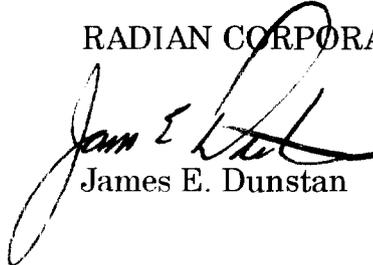
Dear Mr. Caton:

Submitted on behalf of RADIAN CORPORATION, is its
"ADDITIONAL COMMENTS" in the above-referenced proceeding. Enclosed
are an original and eight copies, a copy for each Commissioner.

If there are any questions concerning this matter, please
communicate directly with this office.

Respectfully submitted,

RADIAN CORPORATION


James E. Dunstan

JED/cap

Enclosures

No. of Dockets rec'd 0+3
JED

Before The
Federal Communications Commission
Washington, D.C. 20554

In The Matter Of)
)
Amendment of Section 2.106 of) ET Docket No. 93-59
the Commission's Rules to) RM-8092
Allocate Spectrum for)
Wind Profiler Radar Systems)

DOCKET FILE COPY ORIGINAL

TO: The Commission

**ADDITIONAL COMMENTS OF
RADIAN CORPORATION**

Radian Corporation, by its attorneys, hereby files these Additional Comments in the above-referenced proceeding. In support of its Additional Comments, Radian Corporation submits as follows:

I. INTRODUCTION AND BACKGROUND

On August 13, 1992, Radian Corporation ("Radian"), a scientific research and consulting firm based in Austin, Texas, filed a Petition for Rule Making ("Petition"), requesting the allocation of frequencies in the 915 MHz range for the use of lower-atmosphere Wind Profiler Radar Systems ("Wind Profilers").

The Commission released the above-referenced Notice of Proposed Rule Making and Notice of Inquiry ("NPRM/NOI") on April 1, 1993 (FCC Document 93-136), setting the deadline for comments at June 15, 1993, and reply comments at July 15, 1993. Comments and reply comments were filed by a number of parties, including Radian.

Radian's position is that its 915 MHz Wind Profilers can exist compatibly with other users in the 902-928 MHz band, that that band already is being used by government Wind Profilers using Radian's technology, and that the Commission should make a secondary allocation for commercial use of Wind Profilers in that band. Nothing has happened since that date.

This proceeding has taken a back seat to PR Docket No. 93-61, the Location and Monitoring System ("LMS") rule making. That is understandable based on the number of parties, and fervor of arguments raised in the LMS proceeding. The Commission issued a *Report and Order* in the proceeding on February 6, 1995, in which the Commission attempted to accommodate the needs of all LMS providers. (Amendment of Part 90 of the Commission's Rules to Adopt Regulations for Automatic Vehicle Monitoring Systems, 10 FCC Rcd 4695) Several parties have filed petitions for reconsideration which are still pending.

II. THE COMMISSION SHOULD NOW MOVE FORWARD WITH THE WIND PROFILER PROCEEDING

Radian submits that it is now time for the Commission to move forward with the instant proceeding and issue a formal notice of proposed rule making. Radian has sat back patiently while the various LMS system advocates jockeyed for bandwidth, and Part 15 users tried to gain additional recognition in this band. Judging from the sheer number of filings in the LMS proceeding, by all accounts there has been a hard-fought war over the 902-928 MHz band.

Radian considers 915 MHz Wind Profilers as being the “Switzerland” of that war, able to remain neutral and willing to share the band with other users. Radian’s position consistently has been that its 915 MHz Wind Profilers can coexist with any of the LMS proposals, because of the nature of the emissions from the Wind Profilers (a narrow beam transmission vertical to the horizon), their relative scarcity, and the fact that most are located in relatively unpopulated areas away from major thoroughfares where interference might exist. Radian continues to be willing to test its systems with any LMS provider to ensure that no interference will exist. No party in this proceeding has been able to demonstrate that Radian-built 915 MHz Wind Profilers have caused any interference in the past, nor have sound engineering studies demonstrated that even theoretical interference exists.

III. THE USER COMMUNITY CONTINUES TO SUPPORT COMMERCIAL 915 MHz WIND PROFILERS

As additional support for the proposition that 915 MHz Wind Profilers can coexist with other users in the band, and that there is a legitimate need and demand for such systems, Radian herewith attaches letters of support from more than 25 current users and supporters of government installed Wind Profilers, many in the 915 MHz band. Copies of these letters are attached hereto, and a summary of the letters and their content, is contained in Table I, attached hereto.

These letters of support underscore the fact that 915 MHz Wind Profilers already exist and are in use today. Based on the sheer number of users, if interference was going to exist between 915 MHz Wind Profilers and other users in the band, there certainly should be documented incidents by now, which would have been brought to the Commission's attention. Instead, these letters prove that 915 MHz Wind Profilers can coexist with other users in the 902-928 MHz band.

More importantly, the letters of support underscore the absolute need for 915 MHz Wind Profilers. Support letters have come in from government agencies such as NOAA, EPA, The US Air Force, The California EPA's Air Resources Board, The "Hurricane Hunters," and a variety of university and private companies that provide critical public safety services. The letters make clear that *because of the laws of physics*, 915 MHz Wind Profilers are necessary to augment Profilers in the 449 MHz band. 915 MHz systems are the only ones that can sample the "boundary layer" of the atmosphere to determine air movement and particulants. Moreover, the smaller physical design of 915 MHz systems allow for ease of transport, and location in locations such as around airports, where 449 MHz systems are physically too large because of severe height constraints.

The letters of support should give the FCC pause in its current race to sell spectrum to the highest bidder, regardless of the use to which the spectrum will be put. Radian submits that to eliminate or severely restrict future use of the 915 MHz band for Wind Profilers will have a profound effect on public safety. From air

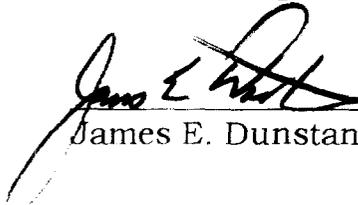
transport safety to air pollution monitoring to severe weather forecasting, 915 MHz band Wind Profilers are an absolutely essential component.

IV. CONCLUSIONS

For these reasons, and those set forth in Radian's Petition and Comments, Radian respectfully requests that the Commission move with all diligence to issue a notice of proposed rule making looking toward allocating spectrum in the 902 - 928 band for the use of Radar Wind Profilers.

Respectfully submitted,

Radian Corporation



James E. Dunstan

HALEY, BADER & POTTS
Suite 900
1450 North Fairfax Drive
Arlington, VA 22203-1633
703/841-0606

September 11, 1995

Table I
Summary Of Letters Of Support For
900 MHz Wind Profilers

Name/Organization	Location	Comments
Jerry H. Crescenti Physical Scientist US Envir. Protection Agency National Exposure Research Laboratory	Research Triangle Park, NC	EPA currently considering using 915 MHz profilers for regulatory monitoring of Clean Air Act for ozone.
Dr. James G. Yoe Nat. Oceanic & Atmos. Admin. (NOAA)	Washington, D.C.	915 MHz best suited for Boundary Layer sampling of weather related phenomena impacting public safety
Charles G. Lindsey Manager, Meteorological Programs Sonoma Technology, Inc.	Santa Rosa, CA	915 MHz better suited than 449 MHz for lower atmosphere measurements of pollutants and toxins
Robert A. Maddox Nat. Oceanic & Atmos. Admin. (NOAA) National Severe Storms Laboratory	Norman, OK	Government users in band have coexisted for many years with ISM users
Stephen K. Cox & David Wood Dept. of Atmospheric Science Colorado State Univ.	Fort Collins, CO	Over 100 installations currently coexist with other users in band.
John R. Holmes, Ph.D. Calif. Envir. Protection Agency Air Resources Board	Sacramento, CA	915 MHz important for urban air quality monitoring supporting efforts to protect public health and welfare
Jeff D. Reaves & Halina S. Dziewit University Corp. for Atmospheric Research Foundation	Boulder, CO	915 MHz critical to measure atmospheric impact of chemical spills, wind shear at airports, global climate changes
Floyd F. Hauth Study Director National Weather Service Modernization Com. National Research Council	Washington, D.C.	449 MHz profilers cannot achieve detailed measurements of boundary layer phenomena

Donald A. Chisholm Satellite Analysis and Weather Prediction Branch Dept. of the Air Force Phillips Laboratory	Hanscom AFB, MA	Long history of cooperation between 915 MHz Wind Profilers and other users in the Band
53 Weather Recon Sq. Hurricane Hunters Keesler AFB, MS	Keesler AFB, MS	
Tom Bellinger Division of Planning and Analysis State of Illinois Department of Nuclear Safety	Springfield, IL	915 MHz Wind Profilers critical for issues involving safety of life and emergency response.
Ronald L. Schwiesow Research Engineer National Center for Atmos. Research	Boulder, CO	915 MHz Wind Profilers used in conjunction with Doppler shift laser light backscatter systems for health and safety concerns
Frederick H. Carr Prof. of Meteorology University of Oklahoma School of Meteorology	Norman, OK	Supports continuation of rule making proceeding
Robert D. Palmer, Ph.D. Assistant Prof., Dept. of Electrical Engineering University of Nebraska	Kyoto, Japan	Visiting scientist at Kyoto University currently using 915 MHz system.
Robert Nunes Monterey Bay Unified Air Pollution Control Dist.	Monterey, CA	Heavily reliant on profiler data to provide critical information on transport of air pollution
Richard T. McNider, Ph.D. Director, Earth System Science Laboratory University of Alabama in Huntsville	Huntsville, AL	
Dr. William L. Rubin WLR Research, Inc.	Whitestone, NY	915 MHz sensors used at John F. Kennedy airport to measure wingtip wake vortices
Richard Dunk Sr. Air Quality Scientist Jersey Central Power & Light Company	Morristown, NJ	

Mike Smith President WeatherData, Inc.	Wichita, KS	
Michael W. Ueltzen President & CEO The Republic Group	Arlington, VA	
Gregory Nastrom Dept. of Earth Sciences St. Cloud State Univ.	St. Cloud, MN	
ACR, Inc.	Minneapolis, MN	
Paul Scoggins TMPA	Bryan, TX	
Ioya Popovic Assoc. Prof. University of Colorado	Boulder, CO	



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL EXPOSURE RESEARCH LABORATORY
Research Triangle Park, NC 27711

Office of
Research and Development

August 4, 1995

James Dunstan
Haley, Bader, and Potts
4350 North Fairfax Drive
Arlington, Virginia 22203-1633

Dear Mr. Dunstan,

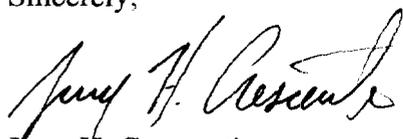
This letter is provided to the Federal Communications Commission to support the continuation of the rulemaking process for a commercial 915 MHz frequency allocation used by wind profiling radars (Notice of Inquiry, FCC Docket No. ET 93-59, FCC 93-136 dated April 1, 1993).

As you already know, the 915 MHz Instrumentation, Scientific and Medical (ISM) band has been utilized by government users of wind profiling radars. These users include the Department of Defense and the National Oceanic and Atmospheric Administration. It is no accident that these systems operate efficiently at the 915 MHz range. This frequency is ideally suited to determine the turbulent scales of interest in the atmospheric boundary layer (surface to 2 to 3 km). These turbulent eddies are responsible for the transport and dispersion of air pollutants. The radar provides scientists with continuous and detailed information on the structure of the atmosphere. These sensors have been used in numerous studies and have provided a great deal of insight into the physical processes of the boundary layer.

The Environmental Protection Agency is strongly considering the use of radar wind profilers for regulatory monitoring. One example is the Photochemical Assessment Monitoring Station (PAMS) network. These stations will be sited in urban regions which exceed ozone standards. Networks of surface meteorological stations and wind profiling radars will provide data for assessment of ozone and its precursors (i.e., those constituents which lead to the formation of ozone). These data will be used in numerical models which will help EPA scientists understand how ozone is created, transported and destroyed.

I strongly urge the FCC to continue the rulemaking process. It is important that wind profiling radars continue to use the 915 MHz ISM frequency band. Your consideration is greatly appreciated.

Sincerely,



Jerry H. Crescenti
Physical Scientist

cc:	William D. Neff	NOAA/ETL
	William F. Hunt, Jr.	EPA/OAQPS
	Gary Patrick	NTIA
	K. Russell Peterman	Radian
	Francis A. Schiermeier	EPA/NERL



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL ENVIRONMENTAL SATELLITE, DATA,
AND INFORMATION SERVICE

Washington, D.C. 20233

Dr. James G. Yoe
NOAA/NESDIS/ORA
Satellite Research Laboratory
Room 810 NSC E/RA14
Washington, D.C. 20233

11 August 1995

Mr. James Dunstan
Haley, Bader, and Potts
4350 North Fairfax Drive
Arlington, VA 22203-1633

For: Secretary; FCC, Washington, D.C.

Subject: **Release of Notice of Proposed Rulemaking (NPRM) for 915 MHz Radar Wind Profilers Allocation**

Ref: Notice of Inquiry, FCC Docket No. ET 93-59, FCC 93-135
Dated 1 April 1993

Dear Mr. Dunstan:

This letter is submitted in support of the continuation of the rulemaking process for a commercial 915 MHz frequency allocation for Wind Profiler Systems.

The National Oceanic and Atmospheric Administration (NOAA) has developed a variety of Doppler Radar Wind Profiler systems during the past two decades. Prominent among the systems pioneered by NOAA are so-called boundary-layer (BL) profilers operating at 915 MHz.

The BL is important because it is the portion of the atmosphere in which the adverse effects of weather-related phenomena are experienced, through which all aircraft must take off and land, and through which heat, moisture, aerosols, and pollutants (chemical or nuclear) are exchanged with the land and sea surfaces. Therefore, wind profiling in the BL is critical for civilian (academic, commercial, and government) and military agencies working to protect the lives, health, and property of U.S. citizens against severe weather and air pollution.

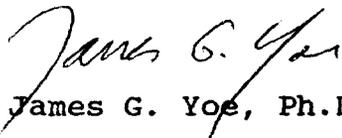
The 915 MHz frequency, sensitive to both clear-air turbulence and precipitation, is ideal for BL sounding. The 915 MHz profilers feature low-power transmission and rapid transmit/receive switching to protect their sensitive receivers. Higher-power radars operated at lower frequencies (449 MHz) to measure winds at greater altitudes are not readily convertible for BL wind profiling.



Transmissions from 915 MHz BL profilers are not only weak, but are also directed near-vertically with suppressed sidelobes. Therefore their operation poses a minimal threat of interference to other users in the same frequency band.

The 915 MHz wind profiler technology developed by NOAA is mature and extremely suitable for transfer to the private sector. The benefits offered by 915 MHz profilers are enormous and well established, and the risk of coexistence with other users of the frequency band negligible. Therefore, I strongly urge the FCC to continue the rulemaking process. Thank you for your attention and consideration.

Sincerely,


James G. Yoe, Ph.D.

cc: Radian Corporation
2990 Center Green Court, S.
Boulder, CO 80301

Gary Patrick
NTIA
179 Admiral Cochrane Drive
Annapolis, MD 21401



Sonoma Technology, Inc.

5510 Skylane Blvd., Suite 101
Santa Rosa, CA 95403
707 / 527-9372
Fax 707 / 527-9398

STI Ref. No. 95016

August 24, 1995

Mr. James Dunstan
Haley, Bader and Potts
4350 North Fairfax Drive
Arlington, VA 22203-1633

For: Federal Communications Commission, Washington, D.C.

Subject: **Release of Notice of Proposed Rulemaking (NPRM) for 915 MHz Radar Wind Profiler Allocation**

Ref: Notice of Inquiry No. FCC 93-136 Dated 1 April 1995

Dear Mr. Dunstan:

This letter is provided to the Federal Communications Commission to support the continuation of the rulemaking process for a commercial 915-MHz frequency allocation for Wind Profiler Systems.

There is an Existing Government Allocation at 915 MHz.

The 915-MHz Instrumentation, Scientific, and Medical (ISM) band is already utilized by government users of wind profilers. These users include all branches of the Department of Defense as well as many other U.S. government agencies, such as the National Oceanic and Atmospheric Administration (NOAA) and the National Weather Service (NWS).

There Are Compelling Physical Principles for Using 915 MHz.

There are compelling reasons for this allocation. The physical principles upon which radar profilers operate are dependent on the scales of turbulence in the atmosphere being matched to the radar wavelength. Years of experience with scientific programs led NOAA to develop radar profilers at 915 MHz to provide high resolution data in the atmospheric boundary layer and lower troposphere. This technology has subsequently been made available to commercial users and private industry. Larger radar profilers operating at 449 MHz can never obtain the boundary layer measurements required for many applications.

There is a Long History of Cooperation with Other Users.

The domestic use of 915-MHz profilers includes over 100 installations with almost no incidents of interference with other services. Non-conflicting siting requirements and the vertically pointed profiler antennas means there is almost no chance of future incidents of interference. Profiler users have always cooperated with other ISM-band users in testing, limiting occupied bandwidth, and controlling antenna sidelobes. Profilers will never be deployed in massive numbers; the United States would probably be saturated with profiler coverage with less than 1000 systems.

The Application of 915-MHz Profilers is Critical for Issues Involving Safety of Life and Emergency Response.

Users of the 915-MHz technology include many state agencies and regional air pollution districts working to mitigate the effects of air toxics and pollution in heavily populated areas. Other users include universities and private industry working to protect citizens from chemical spills, nuclear releases, wind shear at airports, global climate change, and dangerous weather phenomenon. In short, 915-MHz radar profilers will help save lives and protect property for thousands of citizens.

It is for these reasons that we strongly urge the FCC to continue the rulemaking process, and to let the wind profiler users peaceably co-exist in the 915-MHz ISM frequency band. Your consideration is sincerely appreciated.

Sincerely,



Charles G. (Lin) Lindsey
Manager, Meteorological Programs

CGL

c: DL Blumenthal/STI
KR Peterman/Radian Corporation
2990 Center Green Court, S.
Boulder, CO 80301



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
ENVIRONMENTAL RESEARCH LABORATORIES

National Severe Storms Laboratory
1313 Halley Circle
Norman, OK 73069

August 16, 1995

James Dunstan
Haley, Bader, and Potts
4350 North Fairfax Drive
Arlington, VA 22203-1633

For: Secretary; Federal Communications Commission, Washington, D.C.

Subject: **Release of Notice of Proposed Rulemaking (NPRM) for 915 MHZ
Radar Wind Profiler Allocation**

Ref: Notice of Inquiry, FCC Docket No. ET 93-59, FCC 93-136 Dated 1
April 1993

Dear Mr. Dunstan:

This letter is provided to the Federal Communications Commission to support the continuation of the rulemaking process for a commercial 915-MHZ frequency allocation for Wind Profiler Systems.

There is an Existing Government Allocation at 915 MHZ.

The 915-MHZ Instrumentation, Scientific, and Medical (ISM) band is already utilized by government users of wind profilers. These users include all branches of the Department of Defense as well as many other U.S. government agencies like NOAA's National Weather Service and Environmental Research Laboratories (ERL). We are part of ERL and have used the 915-MHZ profilers in our scientific research programs for making important boundary layer measurements. Given proper funding, we would like to obtain a mobile 915-MHZ system for our own use.

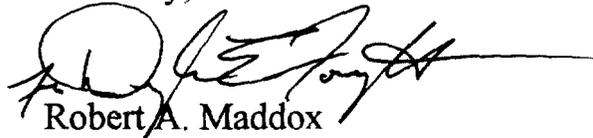


There are Compelling Physical Principles for Using 915 MHZ.

There are compelling reasons for this allocation. The physical principles upon which radar profilers operate are dependent on the scales of turbulence in the atmosphere being matched to the radar wavelength. Years of experience with scientific programs led our fellow NOAA laboratories to develop boundary layer radar profilers at 915 MHZ, and this technology has subsequently been made available to commercial users and private industry on an experimental basis. Larger radar profilers operating at 449 MHZ can never achieve the boundary layer measurements required for many applications. These boundary measurements are important in continuing our understanding of the atmospheric conditions that produce severe weather. Improved understanding will lead to improved forecasts resulting in lives saved and protected property for thousands of citizens.

It is for these reasons that we strongly urge the FCC to continue the rulemaking process, and to let the wind profiler users peaceably co-exist in the 915-MHZ ISM frequency band. Your consideration is sincerely appreciated.

Sincerely,

A handwritten signature in black ink, appearing to read "Robert A. Maddox", written over a circular stamp or mark.

Robert A. Maddox
Director, NSSL

cc:

D. Forsyth, NSSL
J. Calder, ERL
G. Patrick, NTIA
Radian Corporation



August 8, 1995

Department of
Atmospheric Science
Fort Collins, Colorado 80523
(303) 491-8360
FAX: (303) 491-8449

James Dunstan
Haley, Bader, and Potts
4350 North Fairfax Drive
Arlington, VA 22203-1633

For: Secretary; Federal Communicators Commission Washington, D.C.

Subject: **Release of Notice of Proposed Rulemaking (NPRM) for 915-MHz Radar Wind Profiler Allocation**

Ref: Notice of Inquiry, FCC Docket No. ER 93-59, FCC 93-136 Dated 1 April 1993

Dear Mr. Dunstan:

This letter is provided to the Federal Communications Commission to support the continuation of the rulemaking process for a commercial 915-MHz frequency allocation for Wind Profiler Systems.

The 915-MHz Instrumentation, Scientific, and Medical (ISM) band is already utilized by government users of wind profilers. These users include all branches of the Department of Defense as well as many other U.S. government agencies like NOAA and the National Weather Service.

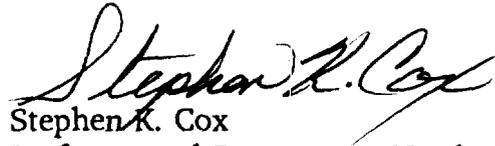
There are compelling reasons for using 915-MHz profilers to monitor and probe the lower atmosphere. The physical principles upon which radar profilers operate are dependent on the scales of turbulence in the atmosphere being matched to the radar wavelength. Years of experience with scientific programs led the National Oceanic and Atmospheric Administration to develop boundary layer radar profilers at 915-MHz, and this technology has subsequently been made available to commercial users and private industry on an experimental basis. Larger radar profilers operating at 449 MHz can never achieve the boundary layer measurements required for many applications.

The domestic use of 915-MHz profilers includes over 100 installations with almost no incidents of interference with other services. Non-conflicting siting requirements and the vertically pointed profiler antennas means there is almost no chance of future incidents of interference. Profiler users have always cooperated with other ISM-band users in testing, limiting occupied bandwidth, and controlling antenna sidelobes. Profilers will never be deployed in massive numbers; the United States would probably be adequately served with profiler coverage with less than 1000 systems.

Users of the 915-MHz technology include many state agencies and regional air pollution districts working to integrate the effects of air toxics and pollution in heavily populated areas. Other users include universities and private industry working to protect citizens from chemical spills, nuclear releases, wind shear at airports, global climate change, and dangerous weather phenomenon.

For the above reasons I strongly urge the FCC to continue the rulemaking process, and to let the wind profiler users peaceably co-exist in the 915-MHz frequency band.

Sincerely,

A handwritten signature in black ink, appearing to read "Stephen K. Cox". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Stephen K. Cox
Professor and Department Head

cc: Radian Corporation
Gary Patrick, NTIA



August 8, 1995

Department of
Atmospheric Science
Fort Collins, Colorado 80523
(303) 491-8360
FAX: (303) 491-8449

James Dunstan
Haley, Bader, and Potts
4350 North Fairfax Drive
Arlington, VA 22203-1633

For: Secretary; Federal Communicators Commission Washington, D.C.

Subject: Release of Notice of Proposed Rulemaking (NPRM) for 915-MHz Radar Wind Profiler Allocation

Ref: Notice of Inquiry, FCC Docket No. ER 93-59, FCC 93-136 Dated 1 April 1993

Dear Mr. Dunstan:

This letter is provided to the Federal Communications Commission to support the continuation of the rulemaking process for a commercial 915-MHz frequency allocation for Wind Profiler Systems.

There is an Existing Government Allocation at 915 MHz.

The 915-MHz Instrumentation, Scientific, and Medical (ISM) band is already utilized by government users of wind profilers. These users include all branches of the Department of Defense as well as many other U.S. government agencies like the National Oceanic and Atmospheric Administration (NOAA) and the National Weather Service.

There are Compelling Physical Principles for Using 915 MHz.

The physical principles upon which radar profilers operate are dependent on the scales of turbulence in the atmosphere being matched to the radar wavelength. Years of experience with scientific programs led NOAA to develop boundary layer radar profilers at 915-MHz, and this technology has subsequently been made available to commercial users and private industry on an experimental basis. Larger radar profilers operating at 449 MHz can not achieve the boundary layer measurements required for many applications.

There is a Long History of Cooperation with Other Users.

The domestic use of 915-MHz profilers includes over 100 installations with almost no interference with other services. Specific siting requirements and the vertically pointing profiler antennas will prevent future incidents of interference. Profiler users have always cooperated with other ISM-band users by testing, limiting occupied bandwidth, and

controlling antenna sidelobes. Profilers will never be deployed in massive numbers; the United States would probably be adequately served with profiler coverage with less than 1000 systems.

The Application of 915-MHz Profilers is Critical for Issues Involving Safety of Life and Emergency Response.

Users of the 915-MHz technology include many state agencies and regional air pollution districts working to integrate the effects of air toxins and pollution in heavily populated areas. Other users include universities and private industry working to protect citizens from chemical spills, nuclear releases, wind shear at airports, global climate change, and dangerous weather phenomenon. In short, 915-MHz radar profilers help save lives and protect property for thousands of citizens.

For the above reasons I strongly urge the FCC to continue the rulemaking process, and to allow the wind profiler users peaceably co-exist in the 915-MHz frequency band. Your consideration is sincerely appreciated.

Sincerely,

A handwritten signature in black ink, appearing to read "David Wood", written in a cursive style.

David Wood
Research Coordinator

cc: Radian Corporation
Gary Patrick, NTIA

AIR RESOURCES BOARD

2020 L STREET
P.O. BOX 2815
SACRAMENTO, CA 95814-2815



August 17, 1995

Mr. James Dunstan
Haley, Bader, and Potts
4350 North Fairfax Drive
Arlington, VA 22203-1633

Dear Mr. Dunstan:

I write in support of a commercial frequency allocation for wind profiler systems [Notice of Proposed Rule Making (NPRM) for 915 MHz Radar Wind Profiler (RWP) Allocation] which is in reference to Notice of Inquiry, FCC Docket No. ET 93-59, FCC 93-136 Dated April 1, 1993. The California Air Resources Board's support for this allocation is predicated upon the wide and expanding services of 915 MHz RWP's in the air quality research and enforcement communities, in the National Weather Service (NWS), and in the academic circles engaged in meteorological modeling. Advanced meteorological modeling is a significant part of our urban air quality modeling, which in turn, is a key to forecasting air quality and achieving compliance with applicable state and national standards. Thus, we need data from 915 MHz RWP's now and will for the foreseeable future.

The utility of the RWP system requires that the wavelength of the radar be matched to scales of turbulence in the atmosphere. Years of experimentation at the National Oceanic and Atmospheric Administration (NOAA) suggest atmospheric boundary layer RWP's best suited for work in meteorology and air quality fields can function well at 915 MHz. This mature technology has now been made available to commercial users and private industry on an experimental basis. Trials of larger RWP's operating at 449 MHz suggest they may be limited to measurements below the atmospheric boundary layer. Thus, the physical principles of RWP's and our needs for measurements in the atmospheric boundary layer provide compelling evidence for the allocation of the 915 MHz band for RWP use.

The 915 MHz Instrumentation, Scientific, and Medical (ISM) band is already used by government wind profilers. Users include all branches of the Department of Defense, as well as many other U.S. government agencies such as NOAA, the National Aeronautics and Space Administration (NASA), and the NWS. In general, government agencies and academic



institutions are likely to use RWP's in the ISM band. In over a hundred such installations in the United States, other users of the 915 MHz band have not reported any interference with their services. Strict siting requirements and the vertically oriented RWP's also minimize any chance of future interference. The RWP user community has always cooperated with other ISM band users in testing, limiting occupied bandwidth, and controlling antenna sidelobes. Finally, the whole of the United States is likely to be served with no more than 1,000 RWP's, limiting the share of the ISM band required. Given the long history of cooperation with other users, we are confident that RWP interference with other users of the ISM band is highly unlikely in the future.

The federal, state, and regional environmental agencies have explored using RWP systems to determine the effects of chemical spills, and accidental radionuclide releases in heavily polluted areas. Airport authorities have explored using RWP systems to detect wind shear; and the NWS has studied using these systems for determining global climate change and dangerous weather phenomena. Quite clearly, the 915 MHz RWP system helps agencies such as ours and many others in protecting the public health and welfare.

Considering the evidence of the 915 MHz RWP systems past use, future utility, and absence of interference with other ISM band users, the California Air Resources Board strongly urges the FCC to continue the rulemaking process, and to let the RWP systems share the 915 MHz ISM frequency band.

Sincerely yours,



John R. Holmes, Ph.D.
Chief, Research Division

cc: Radian Corporation
2990 Center Green Court, S.
Boulder, CO 80301

Gary Patrick
NTIA
179 Admiral Cochrane Drive
Annapolis, MD 21401

UCAR FOUNDATION

University Corporation for Atmospheric Research Foundation

P.O. Box 3000
Boulder, CO 80307

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August 8, 1995

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For: Secretary, Federal Communications Commission Washington, D.C.

Subject: Release of Proposed Rulemaking (NPRM) for 915 MHz Radar Wind Profiler Allocation

Ref: Notice of Inquiry, FCC Docket No. ET 93-59, FCC 93-136 Dated
1 April 1993

Dear Mr. Dunstan:

This letter is provided to the Federal Communications Commission to support the continuation of the rulemaking process for a commercial 915-MHz frequency allocation for Wind Profiler Systems

There is an Existing Government Allocation at 915-MHz.

The 915-MHz Instrumentation, Scientific, and Medical (ISM) band is already utilized by government users of wind profilers. These users include all branches of the Department of Defense as well as many other U.S. government agencies like NOAA and the National Weather Service.

There are Compelling Physical Principles for Using 915-MHz.

There are compelling reasons for this allocation. The physical principles upon which radar profilers operate are dependent on the scales of turbulence in the atmosphere being matched to the radar wavelength. Years of experience with scientific programs led the National Oceanic and Atmospheric Administration to develop boundary layer radar profilers at 915-MHz, and this technology has subsequently been made available to commercial users and private industry on an experimental basis. Large radar profilers operating at 449-MHz can never achieve the boundary layer measurements required for many applications.

There is a Long History of Cooperation with Other Users.

The domestic use of 915-MHz profilers includes over 100 installations with almost no incidents of interference with other services. Non-conflicting siting requirements and the vertically pointed profiler antennas means there is almost no chance of future incidents of interference. Profiler users have always cooperated with other ISM-band users in testing, limiting occupied bandwidth, and controlling antenna sidelobes. Profilers will never be deployed in massive numbers; the United States would probably be adequately served with profiler coverage with less than 1000 systems.

The Application of 915-MHz Profilers is Critical for Issues Involving Safety of Life and Emergency Response.

Users of the 915-MHz technology include many state agencies and regional air pollution districts working to integrate the effects of air toxins and pollution in heavily populated areas. Other users include universities and private industry working to protect citizens from chemical spills, nuclear releases, wind shear at airports, global climate change, and dangerous weather phenomenon. In short, 915-MHz radar profilers will help save lives and protect property for thousands of citizens.

It is for these reasons that we strongly urge the FCC to continue the rulemaking process, and to let the wind profiler users peaceably co-exist in the 915-MHz ISM frequency band. Your consideration is appreciated

Sincerely,



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